STANDARD AGREEMENT

This AGREEMENT ("Agreement") is entered into by and between Cobb, Fendley & Associates, Inc. ("Contractor"), located at 13430 Northwest Freeway, Suite 100 Houston, TX 77040 and City of League City ("City"), a municipal corporation, located at 300 W. Walker, League City, Texas 77573 on the date set forth below.

Terms:

1. **Scope of Services:** Contractor will perform the designated services and/or provided the designated products, as set forth in **Exhibit A**, which is attached and incorporated herein, and which can be generally described as **reconstruction and realignment of Grissom Road and the installation of a 12" water line**. If there is a conflict between the terms of this Agreement and Exhibit A, the terms of this Agreement will prevail.

2. **Term and Termination:** This Agreement shall begin on **April 1, 2019** and shall terminate on **February 28, 2022**. This City reserves the right to terminate this Agreement for convenience upon seven (7) days-notice to the Contractor. Upon such termination, the City shall pay Contractor, at the rate set out in **Exhibit A,** for services satisfactorily performed or products satisfactorily provided up through the date of termination. Notwithstanding any provision in this Agreement to the contrary, the City will not be required to pay or reimburse Contractor for any services performed or for expenses incurred by Contractor after the date of the termination notice that could have been avoided or mitigated by Contractor. This Agreement is eligible for N/A renewal option(s) with a term of N/A year.

3. **Compensation:** Contractor shall be paid for the services, as set forth in **Exhibit A**, attached and incorporated for all purposes. In no event shall the total compensation exceed **$989,950.00 (Nine hundred eighty-nine thousand nine hundred fifty dollars and zero cents)** during the term of this Agreement. The City shall pay Contractor in accordance with the Texas Government Code 2251. Contractor must submit invoices for all services, which invoices must include dates of service and details of services provided. Payment for delivery of services rendered shall not be unreasonably withheld or delayed. If the City disapproves any amount submitted for payment by Contractor, the City shall give Contractor specific reasons for disapproval in writing. Upon resolution of any disputed charges, Contractor shall submit an amended invoice covering any remaining charges to the City.

4. **Insurance:** The Contractor is required to maintain insurance through the term of this Agreement.

   If required by the City, Contractor shall maintain Comprehensive General Liability insurance coverage of $1,000,000 per occurrence or medical malpractice insurance (whichever applies) throughout the entire term of the Agreement. If at any point during the Agreement, Contractor will enter City property, Contractor shall also maintain the following insurance: (i) Worker's Compensation coverage with statutory limits for the State of Texas, including Employers Liability coverage of $500,000 per accident; (ii) Commercial Automobile Liability coverage of $1,000,000 Combined Single Limit; (iii) for engineers and architects only: Professional Liability coverage of $5,000,000 per occurrence; and (iv) for builders only: Builder's Risk coverage in the amount of the construction cost, including protection against named windstorm and flood. All policies must contain a waiver of subrogation against City. Comprehensive General Liability and Commercial Automobile Liability policies must name the City as Additional Insured. Contractor shall pay all insurance deductibles and deductibles must not exceed $10,000 unless

approved in advance by City. Contractor shall provide City Certificates of Insurance evidencing these insurance requirements prior to the start of work.

5. **Independent Contractor:** Contractor is an independent contractor and is not an employee, partner, joint venture, or agent of the City. Contractor understands and agrees that he/she will not be entitled to any benefits generally available to City of League City employees. Contractor shall be responsible for all expenses necessary to carry out the services under this Agreement and shall not be reimbursed by the City for such expenses except as otherwise provided in this Agreement.

6. **Intellectual Property:** This Agreement shall be an Agreement for services and the parties intend and consider any work created as a result of this Agreement, including any and all documentation, images, products or results, to be a work for hire under federal copyright law. Ownership of the work shall belong to and remain the exclusive property of the City. The work may be edited at any time within the City's discretion. If the work would not be considered a work-for-hire under applicable law, Contractor hereby assigns, transfers, and conveys any and all rights, title and interest to City of League City, including without limitation all copyrights, patents, rights of reproduction, rights to ownership, and right to secure registrations, renewals, reissues and extensions thereof. As the sole copyright holder of the work, the City maintains and asserts the rights to use, reproduce, make derivative works from, and/or edit the Work in any form of medium, expression or technology now known or hereafter developed, at any time within the City's discretion. If the City modifies and/or uses the documents for any reason other than their intended use under this agreement, without Contractor's authorization, the Contractor shall be released from any liability as a result of such action. Contractor shall not sell, disclose or obtain any other compensation for the services provided herein. If the work is one to which the provisions of 17 U.S.C. § 106A apply, the Contractor hereby waives and appoints the City to assert on the Contractor's behalf the Contractor's moral rights or any equivalent rights regarding the form or extent of any alteration to the work (including, without limitation, removal or destruction) or the making of any derivative works based on the Work, including, without limitation, photographs, drawings or other visual reproductions of the work, in any medium, for the City's purposes.

7. **Confidentiality:** During the course of the work and/or services to be provided under this Agreement, Contractor may come in contact with confidential information of the City. Contractor agrees to treat as confidential the information or knowledge that becomes known to Contractor during performance of this Agreement and not to use, copy, or disclose such information to any third party unless authorized in writing by the City. This provision does not restrict the disclosure of any information that is required to be disclosed under applicable law. Contractor shall promptly notify the City of any misuse or unauthorized disclosure of its confidential information and upon expiration of this Agreement shall return to the City all confidential information in Contractor's possession or control. Contractor shall further comply with all information security policies of the City that may apply and shall not make any press releases, public statements or advertisement referring to the services provided under this Agreement or the engagement of Contractor without the prior written approval of the City.

8. **Warranties and Representations:** Contractor warrants and agrees that Contractor shall perform the Services and conduct all operations in conformity with all applicable federal, state, and local laws, rules, regulations, and ordinances. For any Service performed on premises owned or controlled by the City, Contractor warrants and agrees that Contractor will perform the Services in compliance with all City Rules, including but not limited to, prohibitions related to tobacco use, alcohol, and other drugs.

9. **Licenses/Certifications:** Contractor represents and warrants that it will obtain and maintain in effect, and pay the cost of all licenses, permits or certifications that may be necessary for Contractor's performance of this Agreement. If Contractor is a business entity, Contractor warrants, represents, covenants, and agrees that it is duly organized, validly existing and in good standing under the laws of the state of its incorporation; and is duly authorized and in good standing to conduct business in the State of

Texas, that it has all necessary power and has received all necessary approvals to execute and deliver the Agreement and is authorized to execute this Agreement according to its terms on behalf of Contractor.

10. **Performance/Qualifications:** Contractor agrees and represents that Contractor has the personnel, experience, and knowledge necessary to qualify Contractor for the particular duties to be performed under this Agreement. Contractor warrants that all services performed under this Agreement shall be performed consistent with generally prevailing professional or industry standards.

11. **Conflict of Interest:** Contractor warrants, represents, and agrees that Contractor presently has no interest and shall not acquire any interest, direct or indirect, that would conflict in any manner or degree with Contractor's performance of the Services hereunder. Contractor further warrants and affirms that no relationship or affiliation exists between Contractor and the City that could be construed as a conflict of interest with regard to this Agreement.

12. **INDEMNIFICATION: CONTRACTOR SHALL DEFEND, INDEMNIFY AND HOLD HARMLESS THE CITY , AND EACH OF ITS DIRECTORS, OFFICERS, AGENTS AND EMPLOYEES FROM AND AGAINST ALL CLAIMS, ACTIONS, SUITS, DEMANDS, PROCEEDINGS, COSTS, DAMAGES AND LIABILITIES, INCLUDING WITHOUT LIMITATION ATTORNEYS' FEES AND REASONABLE LITIGATION COSTS, ARISING OUT OF, CONNECTED WITH, OR RESULTING FROM ANY ACTS OR OMISSIONS OF CONTRACTOR OR ANY AGENT, EMPLOYEE, SUBCONTRACTOR, OR SUPPLIER OF CONTRACTOR IN THE EXECUTION OR PERFORMANCE OF THIS CONTRACT, TO THE EXTENT THE CLAIM ARISES FROM NEGLIGENCE, WILLFUL ACT, BREACH OF CONTRACT OR VIOLATION OF LAW.**

13. **Force Majeure:** Neither the City nor Contractor shall be liable for any delay in the performance of this Agreement, nor for any other breach, nor for any loss or damage arising from uncontrollable forces such as fire, theft, storm, war, or any other force majeure that could not have been reasonably avoided by exercise of due diligence.

14. **Notices:** Any notice given under this contract by either party to the other may be affected either by personal delivery in writing or by mail, registered or certified postage prepaid with return receipt requested. Mailed notices shall be addressed to the addresses of the parties as they appear in the contract. Notices delivered personally shall be deemed communicated at the time of actual receipt. Mailed notice shall be deemed communicated three (3) days after mailing.

15. **Texas Family Code Child Support Certification:** Pursuant to Section 231.006, *Texas Family Code*, Contractor certifies that it is not ineligible to receive the award of or payments under the Agreement and acknowledges that the Agreement may be terminated, and payment may be withheld if this certification is inaccurate.

16. **State Auditor:** Contractor understands that acceptance of funds under the Agreement constitutes acceptance of the authority of the Texas State Auditor's Office, or any successor agency (collectively, "Auditor"), to conduct an audit or investigation in connection with those funds. Contractor agrees to cooperate with the Auditor in the conduct of the audit or investigation, including without limitation providing all records requested. Contractor will include this provision in all contracts with permitted subcontractors.

17. **Jurisdiction:** Any disputes under this Agreement shall be brought in a court of competent jurisdiction in Galveston, Texas and governed by Texas law.

18. **Alternative Dispute Resolution:** To the extent that Chapter 2260, Texas Government Code, is applicable to this Contract and is not preempted by other applicable law, the dispute resolution process provided for in Chapter 2260 and the related rules adopted by the Texas Attorney General Pursuant to Chapter 2260, shall be used by the City and the Contractor to attempt to resolve any claim for breach of contract made by Contractor that cannot be resolved in the ordinary course of business. The Director of Finance of the City shall examine Contractor's claim and any counterclaim and negotiate with Contractor in an effort to resolve such claims. The parties hereto specifically agree that (i) neither the occurrence of an event giving rise to a breach of contract claim nor the pendency of a claim constitute grounds for the suspension of performance by Contractor, (ii) neither the issuance of this Contract by the City nor any other conduct, action or inaction of any representative of the City relating to this contract constitutes or is intended to constitute a waiver of the City's or the state's sovereign immunity to suit; and (iii) the City has not waived its right to seek redress in the courts.

19. **Entire Agreement:** This Agreement contains the entire Agreement between the parties and supersedes all prior agreements, arrangements, and understanding, oral or written between the parties relating to this Agreement. This Agreement may not be modified except by mutual written agreement of the parties executed subsequent to this Agreement.

20. **Eligibility to Receive Payment:** Contractor certifies that, as a matter of State law, it is not ineligible to receive the Agreement and payments pursuant to the Agreement and acknowledges that the Agreement may be terminated, and payment withheld if this representation is inaccurate.

21. **Payment of Debt/Delinquency to State:** Contractor certifies that it is not indebted to the City of League City and is current on all taxes owed to the City of League City. Contractor agrees that any payments owing to Contractor under the Agreement may be applied directly toward any debt or delinquency that Contractor owes the City of League City regardless of when it arises, until such debt or delinquency is paid in full.

22. **Products and Materials Produced in Texas:** If Contractor will provide services under the Agreement, Contractor covenants and agrees that in performing its duties and obligations under the Agreement, it will purchase products and materials produced in Texas when such products and materials are available at a price and delivery time comparable to products and materials produced outside of Texas.

23. **Risk of Loss:** If applicable, all work performed by Contractor pursuant to the Agreement will be at Contractor's exclusive risk until final and complete acceptance of the work by City. In the case of any loss or damage to the work prior to City's acceptance, such loss or damage will be Contractor's responsibility.

24. **Publicity:** Contractor shall not use City's name, logo or likeness in any press release, marketing materials or other public announcement without receiving City's prior written approval.

25. **Legal Construction/Severability:** In the event that any one or more of the provisions contained in this contract shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision, and this contract shall be construed as if such invalid, illegal or unenforceable provisions had never been contained in it. To this end, the provisions of this contract are declared to be severable. The Parties may mutually agree to renegotiate the contract to cure such illegality/invalidity or unconstitutionality if such may be reasonably accomplished.

26. **Limitations:** The Parties are aware that there are constitutional and statutory limitations on the authority of City to enter into certain terms and conditions of the Agreement, including, but not limited to, those terms and conditions relating to liens on City's property; disclaimers and limitations of warranties;

disclaimers and limitations of liability for damages; waivers, disclaimers and limitations of legal rights, remedies, requirements and processes; limitations of periods to bring legal action; granting control of litigation or settlement to another party; liability for acts or omissions of third parties; payment of attorneys' fees; dispute resolution; indemnities; and confidentiality (collectively, the "Limitations"), and terms and conditions related to the Limitations will not be binding on City except to the extent authorized by the laws and Constitution of the State of Texas.

27. **Sovereign Immunity:** Except as otherwise provided by Texas law, neither the execution of the Agreement by City nor any other conduct, action or inaction of any City representative relating to the Agreement is a waiver of sovereign immunity by City.

28. **Authority:** Contractor warrants and represents that Contractor has full power and authority to enter into and perform this Agreement and to make the grant of rights contained herein. The person signing on behalf of the City represents that he/she has authority to sign this Agreement on behalf of City.

29. **Non-Waiver:** No covenant or condition of this Agreement may be waived except by written consent of the waiving party. Forbearance or indulgence by one party in any regard whatsoever shall not constitute a waiver of the covenant or condition to be performed by the other party.

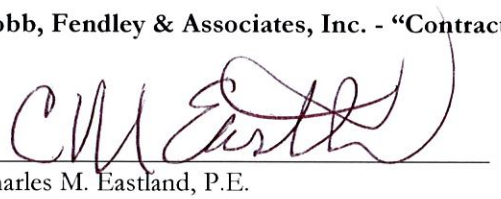
30. **Prohibition on Boycotting Israel:** Pursuant to Section 2270.002, Texas Government Code, by executing this Agreement Contractor verifies that Contractor: (1) does not boycott Israel; and (2) will not boycott Israel during the term of this Agreement.

31. **Prohibition Against Business with Iran, Sudan or Foreign Terrorists Organizations:** Contractor warrants, covenants, and represents that Contractor is not engaged in business with Iran, Sudan, or any company identified on the list referenced in Section 2252.152, Texas Government Code

(Remainder of page intentionally left blank - signature block on next page)

Executed this _____ day of _____, _____.

Cobb, Fendley & Associates, Inc. - "Contractor"



Charles M. Eastland, P.E.
Vice President – Regional Manager

CITY OF LEAGUE CITY – "City"

_____
John Baumgartner, P.E.
City Manager

Attest:

_____
Diana Stapp, City Secretary

Approved as to Form:

_____
Office of the City Attorney

Note: Modification of this Form requires approval by the Office of the City Attorney.

EXHIBIT "A"

(DESCRIPTION OF SERVICES/PRODUCTS AND PRICING ATTACHED)
(Number of pages: 50, including this page)

See Next Page…

CobbFendley

February 25, 2019

Mr. Scott Tuma
Project Manager
City of League City
300 W Walker St.
League City, Texas 77573

Re: Proposal for Engineering Services
City of League City – Reconstruction of Grissom Road
CobbFendley Project No. _____

Dear Mr. Tuma:

Cobb, Fendley & Associates, Inc. (CobbFendley) is pleased to submit this proposal to provide Engineering Services for the Reconstruction of Grissom Road in League City, Harris County, Texas. CobbFendley proposes to provide the Scope of Services, Compensation and Schedule as outlined in Attachments A, B and C, respectively.

Thank you for the opportunity to submit this proposal. Please advise if you have any questions or require additional information.

Sincerely,
COBB, FENDLEY & ASSOCIATES, INC.

Charles M. Eastland, P.E.
Vice President – Regional Manager

Attachments

ATTACHMENT A

SCOPE OF SERVICES
Cobb, Fendley & Associates, Inc.
Proposal for Professional Engineering Services
Reconstruction of Grissom Road

PROJECT DESCRIPTION AND LIMITS

Roadway: Grissom Road
Limits: From Abigail Lane to West NASA Road Bridge

CobbFendley shall provide engineering services required for the preparation of plans, specifications and estimates (PS&E) and related documents, for Grissom Road from Abigail Lane to the West NASA Road Bridge. The design will consist of replacing approx. 5,600 feet of an existing 2-lane rural open ditch roadway with a 4-lane divided urban roadway including an 8 foot wide concrete trail/sidewalk located on the southeast side. Though the design will include all 4-lanes, it is possible that the City may elect to construct only 2-lanes at this time and leave the remaining 2-lanes to be constructed at a later date. The base design will allow Grissom Road to be transitioned into the existing West NASA Rd section, without the need for a traffic signal, until intersection recommendations are finalized and approved by the City. CobbFendley as part of this proposal will provide a traffic intersection analysis of the Grissom Road and West NASA Road intersection, which will include a total of 3 alternatives (with a roundabout being one of the three alternatives) and a recommendation. Additional right-of-way will be necessary to accommodate the new roadway as well as the drainage mitigation required for the increased runoff. In order to address the mitigation requirements, we intent to design an outfall channel (open or closed system) as well as utilizing a larger roadway median, which will require a larger right-of-way width. Drainage and right-of-way needs for the entire project will be included in this design. (The City of League City will be responsible for acquisition of land parcels needed as part of this project) In addition to the roadway reconstruction, the project will also include the installation of approximately 5,300 feet of 12-inch water line from the North Service Area Booster Station to West NASA Road. These services include preliminary engineering report (PER), environmental document preparation and permitting, surveying, right-of-way mapping, preparing roadway design, pedestrian facilities, hydrologic and hydraulic analysis, signing and pavement markings design, traffic intersection design, traffic control plans, storm water pollution prevention plans, ADA Compliance and TDLR registration, utility design, geotechnical study, utility coordination and engineering, bid phase services, and construction phase services necessary to support the design process.

- See *Exhibit A* for Preliminary Grissom Road Schematic
- See *Exhibit B* for a Preliminary Opinion of Probable Construction Cost (4-Lanes)
- See *Exhibit C* for a Preliminary Opinion of Probable Construction Cost (2-Lanes)

SUB CONSULTANTS

CobbFendley shall subcontract the environmental and geotechnical services. Below is a list of the consultants that we anticipate on using for this project:

- Environmental Services– Bio West, Inc.
- Geotechnical Services – Raba Kistner

Proposals for each service are attached to this document.

GENERAL REQUIREMENTS

CobbFendley shall prepare all work in accordance with the latest version of applicable City's procedures, specifications, manuals, guidelines, standard drawings, and standard specifications or previously approved special provisions and special specifications. When design criteria are not identified in City manuals, CobbFendley shall notify the City and refer to State approved manuals, which include: *Roadway Design Manual*, *Hydraulic Design Manual*, the *Texas Manual on Uniform Traffic Control Devices* (TMUTCD), *Standard Specifications for Construction and Maintenance of Highways, Streets and Bridges (latest Edition)*, and other State approved manuals.

CobbFendley shall notify the City and secure permission to enter private property to perform any surveying, environmental, engineering or geotechnical activities needed outside of current right-of-way. CobbFendley shall contact each property owner prior to any entry onto the owner's property and shall request concurrence from the City prior to each entry.

The Engineer shall coordinate through the City's Project Manager for the PS&E development with any local entity having jurisdiction or interest in the project (e.g. drainage district, city, municipal utility district, etc.).

The Engineer shall coordinate issues and communications through the City's Project Manager.

The Engineer shall invoice according to Descriptions shown in Attachment "B" of the Contract for Professional Services. The Engineer shall submit each invoice in a format acceptable to the City.

The Engineer shall submit invoice packages:

City of League City
Attention: Scott Tuma, Project Manager
300 W Walker St.
League City, Texas 77573

PHASE 1 - PRELIMINARY ENGINEERING REPORT (PER)

A. BASIC SERVICES

I. Data Collection and Field Reconnaissance - CobbFendley will collect, review and evaluate data described below. The Engineer shall notify the City in writing whenever the Engineer finds disagreement with the information or documents:

- **a.** Data, if available, from the City, including "as-built plans", existing schematics, right-of-way maps, Subsurface Utility Engineering (SUE) mapping, existing channel and drainage easement data, identified hazardous material sites, current unit bid price information, current special provisions, special specifications, and standard drawings.
- **b.** Documents for existing and proposed development along proposed route from local municipalities and local ordinances related to project development.
- **c.** Utility plans and documents from appropriate municipalities and agencies
- **d.** Flood plain information and studies from the Federal Emergency Management Agency (FEMA), the United States Army Corps of Engineers (USACE), City of League City, Harris County, and other governmental agencies.
- **e.** Conduct field reconnaissance and collect data including a photographic record of notable existing features.

II. PRELIMINARY ROADWAY DESIGN

- **a. Preliminary Schematic -** CobbFendley will develop a Preliminary Schematic for the full length of the project, which will include existing features and the proposed improvements within the existing and any proposed ROW. The Layout must be design scale of 1 in. = 100 ft (or 1 in. = 200 ft as directed by City), including the following features: existing and proposed ROW, existing and proposed horizontal and vertical alignment and profile grade line, and existing and proposed lane widths. The following will be considered when developing the schematic:

    1. Avoid the relocation of existing utilities as much as possible.

    2. Right-of-way and Environmental limitations

    3. Study alternatives and make recommendations for intersection with Grissom Road and West NASA Rd.

Minor modifications in the alignments will be considered to provide for an optimal design.

Prior to proceeding with the final geometric layout CobbFendley will submit to the City for review and approval.

b. Typical Sections - CobbFendley will provide typical sections sheets prepared for the existing and proposed roadway. Typical section information will include:

1. Station Limits
2. Profile Grade Line Location
3. Centerline and Baseline Locations
4. Widths of travel lanes and shoulders
5. Pavement Section
6. Pavement Cross Slopes
7. Curbs
8. Sidewalks
9. Green Space
10. Typical Ditch Side Slopes

c. Roadway Plan and Profiles - CobbFendley will provide roadway plan and profile drawings using CADD standards as required by the City. The drawings will consist of a plan and profile view of existing features and proposed improvements. The roadway base map must contain line work that depicts existing surface features obtained from the schematic drawing and survey, existing subsurface and surface utilities, and existing and proposed right-of-way lines will be shown. Plan and Profile sheets will be prepared to a scale of 1”=40’ horizontal and 1”=4’ vertical on 11”x17” format sheets.

Plan view will include:

1. Roadway centerlines and baselines
2. Pavement edges for all improvements
3. Lane and pavement width dimensions
4. Proposed structure locations
5. Direction of traffic flow on all roadway, and arrows indicating the number of lanes
6. Existing utilities and structures
7. Benchmark information

Profile view will include:

1. Existing and proposed profiles along the proposed centerline

Note: Storm Sewer Plan and Profiles and Roadway Plan and Profiles will be included on the same Sheet.

d. Pavement Design. CobbFendley shall incorporate the pavement design as recommended by Geotechnical Study.

III. PRELIMINARY DRAINAGE

a. Preliminary Drainage System and Culvert Design – In conjunction with the preliminary drainage impact analysis, CobbFendley will develop a preliminary drainage system and culvert layout showing all of the preliminary details of the new proposed drainage structures. These exhibits sheets will be used as a basis for the final design, and will include the following:

1. Design criteria applicable for all design and analysis shall be in accordance with City Resolution 2011-07 adopting the Harris County Flood Control Districts (HCFCD) Criteria Manual for design of flood control and drainage facilities, except where superseded by the City's Master Drainage Plan and Resolution 2018-69 - City's General Design and Construction Standards Manual, Section VII – Specifications for Drainage Projects – Item 701 – General.

2. Preliminary drainage area maps

3. Preliminary storm sewer plan and profiles *Note: (Storm Sewer Plan and Profiles and Roadway Plan and Profiles will be included on the same Sheet.)*

4. Preliminary hydraulic computations

5. Preliminary culvert layouts

6. Preliminary proposed mitigation layouts

7. Provide preliminary proposed water surface elevations for the 2, 10, and 100 year storm events.

8. Superimpose the water surface elevations on a drawing with the existing roadway and ROW ground profile lines to aid in determining the proposed roadway profile.

9. Coordinate with HCFCD

IV. UTILITY COORDINATION – CobbFendley will perform the utility and investigation work involving the research and identification of all private and public utilities within the projects limits. This will include:

1. Researching the existence of public utilities such as sanitary, storm sewer, and waterlines within the project limits
2. Request information from private (CenterPoint Energy, CenterPoint Electric, TNMP, Frontier, AT&T and Others in the project corridor) and pipeline utilities, regarding locations of facilities within the proposed project limits.

3. Prepare an Existing Utility Map for the proposed project limits.

4. Create a conflict list to identify all potential conflicts between the existing utilities and the proposed project improvements.

5. Coordinate with Utility Company's on plans for relocations and provide updated project design information.

V. PRELIMINARY SIGNING AND PAVEMENT MARKINGS

a. Signing. CobbFendley will prepare drawings identifying and locating the signs within the project limits. Proposed signs will be illustrated and numbered on plan sheets.

b. Pavement Marking. CobbFendley will prepare plan sheets showing pavement markings and channelization devices. CobbFendley will select pavement markings from the latest City standards.

VI. PRELIMINARY TRAFFIC CONTROL PLAN – CobbFendley will prepare preliminary Traffic Control Plan (TCP) sheets in accordance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD) for Streets and Highways (latest edition). Plans sheets will include the following:

1. Written narrative of the construction sequencing and work activities per phase.

2. Existing and proposed traffic control devices (regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence.

3. Typical sections for each phase

4. Proposed traffic control devices at grade intersections during each construction phase (stop signs, flagperson, signals, etc.).

5. The Engineer shall show temporary roadways, ramps, structures and detours required to maintain lane continuity throughout the construction phasing.

6. Continuous, safe access to each adjacent property during all phases of construction and to preserve existing access.

7. Temporary drainage to replace existing drainage disturbed by construction activities or to drain detour pavement.

8. Interim signing for every phase of construction. Interim signing must include regulatory, warning, construction, route, and guide signs.

9. Maintain continuous access to abutting properties during all phases of the TCP.

VII. PRELIMINARY WATER AND SANITARY FORCE MAIN LAYOUT – CobbFendley will prepare a preliminary plan sheet showing the proposed waterline and possible sanitary sewer force main relocation along the project limits. Plan sheet will include the following:

1. Proposed waterline alignment as it relates to the project centerline.

2. Starting and ending locations as well as connections along the alignment to existing waterline facilities.

3. Proposed water valve and fire hydrant locations.

4. Depending on roadway alignment, relocation of sanitary sewer force main from West NASA Road to Shady Lane

VIII. STUDY REPORT

a. Preliminary Engineering Report (PER) – CobbFendley will prepare a PER document for submittal to the City at the 30% submittal milestone. (3 copies)

b. Opinion of Probable Construction Cost - CobbFendley will develop and report quantities and opinions of probable construction.

IX. PROJECT MANAGEMENT - This task is to provide the overall management of the contract which includes:

a. Project Scheduling

b. Project Invoicing
c. Monthly Progress Reports
d. Attend Coordination Meetings
e. Progress Review Meetings (Limited to Once a Month)
f. Coordination with Subconsultants

B. ADDITIONAL SERVICES

I. DRAINAGE ANAYLSIS

a. Drainage Design Criteria - Design criteria applicable for all design and analysis shall be in accordance with City Resolution 2011-07 adopting the Harris County Flood Control Districts (HCFCD) Criteria Manual for design of flood control and drainage facilities, except where superseded by the City's Master Drainage Plan and Resolution 2018-69 - City's General Design and Construction Standards Manual, Section VII – Specifications for Drainage Projects – Item 701 – General. CobbFendley will consider NOAA Atlas 14 Version 11 for Rainfall data, and its relationship to the effective 500-year FEMA water surface elevation.

b. Preliminary Drainage Impact Analysis - CobbFendley shall perform a Preliminary Drainage Impact Analysis during development of the Preliminary Schematic to determine the outfall locations, preliminary detention volume requirements, investigate mitigation sites, and compute preliminary water surface elevations.

The Preliminary Drainage Impact Analysis will include the following:

1. Identify the existing drainage outfalls.

2. Existing water surface elevations for the 2, 10, and 100 year storm events.

3. Sheet flow patterns and quantified runoff flow rates for existing and proposed (pre and post project) conditions.

4. Drainage area map delineation for contributing runoff to the existing outfalls and determine hydrologic parameters for existing and proposed conditions.

5. Compute existing and proposed condition hydrographs and determine the required storage volume to mitigate the increase in runoff volume.

6. Determine outfall channel routes/detention size and evaluate potential mitigation sites. Mitigation measures shall be

recommended within the proposed right-of-way wherever possible or as an adjacent parcel basin or channel.

7. Prepare a letter report summarizing findings and recommendations.

8. Coordinate and Submit report to HCFCD for approval.

II. ENVIRONMENTAL SERVICES - The environmental services will be performed by BIO-WEST in accordance with the attached proposal.

III. GEOTECHNICAL SERVICES - The geotechnical investigation will be performed by Raba Kistner in accordance with the attached proposal.

IV. SURVEY- CobbFendley surveyor will provide surveying services necessary to produce topographical maps, locate and tie existing utilities to the project baseline, locate existing right-of-way, to tie the soil boring locations and update topography. Coordinate geometry will be tied to State Plane surface coordinate system.

a. Abstract Map (Working Sketch)

Surveyor shall prepare an abstract map sufficient to determine the following:

1. Any and all interests of public record held in the land to be acquired.

An Abstract Map (Working Sketch) of the current record title holders will be provided on an 11x17 sheet.

b. Topographic Survey (Roadway Alignment)

Limits: Abigail Lane to West NASA Road Bridge. (Approx. 5,600 linear feet)

1. Obtain right of entry to private property for the purpose of performing surveying activities.

2. Contact One-Call to mark existing utilities prior to conducting field survey.

3. Obtain or collect data to create cross-sections and digital terrain models. (Cross sections provided at 100-ft intervals and 50 feet outside ROW on both sides)

4. Profile and cross section intersecting streets and driveways (to 25 feet outside ROW for driveways, 200 feet for intersections streets.

5. Cross section drainage channels for a distance of 200 feet each way outside the ROW. Cross sections shall not exceed 100 feet intervals, shall be right angles to channels, and include flowlines. The width of cross sections shall extend at least 50 feet beyond channel highbanks.

6. Locate existing overhead and underground utilities.

7. Locate topographical features and existing improvements.

8. Determine type of existing material, existing pavements, etc.

9. Provide details of existing drainage features (e.g., culverts, manholes, etc.) including top/grate elevations, flowline elevations, type/size, direction, etc.

10. Locate wetlands. *(Designated by BIO-WEST)*

11. Locate existing rights-of-way.

12. Locate boreholes.

13. Provide 11x17 sheet of Topographical features obtained from survey field work.

c. Topographic Survey (Proposed Outfall Alignment)

Limits: Grissom Road bend to Clear Creek (Approx. 1,700 linear feet)

1. Obtain right-of-entry to private property for the purpose of performing surveying activities.

2. Once an outfall location has been determined, surveyor will obtain natural ground elevation along the proposed outfall alignment from Grissom Road to Clear Creek. Cross sections shall not exceed 100 feet intervals. The width of cross sections shall be 100-feet wide, centered on the proposed alignment.

3. Provide State of Texas boundary at proposed outfall location on Clear Creek (LSLS). Coordinate with Texas General Land Office.

4. Locate existing overhead and underground utilities.

5. Locate topographical features and existing improvements.

6. Locate wetlands. *(Designated by BIO-WEST)*

7. Locate existing right-of-ways.

8. Locate boreholes.

9. Provide 11x17 sheet of Topographical features obtained from survey field work.

d. Establish Project Control – CobbFendley surveyor will verify benchmark coordinates and establish additional horizontal and vertical control necessary for the project.

1. Establish horizontal and vertical control points within the project limits
2. Horizontal control will be tied to State Plan surface coordinates while vertical control will be tied to Tropical Storm Allison Recovery Program (TSARP) monumentation.

c. Survey Control Sheet – CobbFendley surveyor shall also prepare a *Survey Control Sheet(s)*, signed, sealed and dated by the professional engineer in direct responsible charge of the surveying and the responsible RPLS for insertion into the plan set. The *Survey Control Index Sheet* shows an overall view of the project control and the relationship or primary monumentation and control used in the preparation of the project.

The following information shall be shown on the *Survey Control Index Sheet:*

1. Overall view of the project and primary control monuments set for control of the project.

2. Identification of the control points

3. Baseline and/or centerline

4. Graphic (Bar) Scale

5. North Arrow

6. Provide 11x17 sheet(s) of Survey Control Data, signed, sealed and dated by the professional surveyor.

V. TRAFFIC INTERSECTION ANALYSIS – CobbFendley will evaluate the existing intersection of Grissom Road and West NASA Road and provide three

alternatives, one of which will be a roundabout, for the future design and construction. A total of 4 scenarios will be modeled. The three alternatives will have input from the City staff before moving forward.

a. Site Visit - A site visit shall be performed to survey and investigate site conditions and to review general field survey information.

b. Data Collection - Collect turning movement counts from 6AM to 6PM for the Grissom Rd / W. Nasa intersection. Data will be reviewed for accuracy.

c. Traffic Forecasting / Volume Diagrams - Utilize H-GAC, TxDOT and City traffic data in order to develop growth rate/future volumes for the intersection.

d. No Build Exhibit - Develop exhibit of the existing roadway geometry.

e. Schematic Alternatives - Generate a maximum of three (3) schematic alternatives for consideration. One of the three alternatives being a roundabout.

f. No Build Analysis (Synchro) - Utilizing Synchro, determine LOS for existing geometry for specified design year.

g. Alternatives Analysis (Synchro) – Utilizing Synchro, determine LOS for each proposed alternative for specified design year.

h. Preliminary Engineering Report (Traffic Section) -To be included in the overall PER, we will develop the traffic section summarizing the findings from the analysis. This report will include**:**

1. Traffic forecasting / volumes for existing, no build and build
2. No build exhibit
3. Schematic Design Exhibits (3 Alternatives)
4. Level of Service Analysis (LOS) using Synchro for no build and 3 alternatives
5. Prepare Design and Opinion of Probable Construction Cost Estimates

PHASE 2 – FINAL DESIGN

A. BASIC SERVICES

I. ROADWAY DESIGN - CobbFendley will prepare the final roadway design in accordance with the approved Preliminary Engineer Report.

a. Typical Sections - CobbFendley will provide typical sections sheets prepared for the existing and proposed roadway. Typical section information will include:

1. Station Limits
2. Profile Grade Line Location
3. Centerline and Baseline Locations
4. Widths of travel lanes and shoulders
5. Pavement Section
6. Pavement Cross Slopes
7. Curbs
8. Sidewalks
9. Green Space (Mow Strips)
10. Typical Ditch Side Slopes

b. Roadway Plan and Profiles - CobbFendley will provide roadway plan and profile drawings using CADD standards as required by the City. The drawings will consist of a plan and profile view of existing features and proposed improvements. The roadway base map must contain line work that depicts existing surface features obtained from the schematic drawing and survey, existing subsurface and surface utilities, and existing and proposed right-of-way lines will be shown. Plan and Profile sheets will be prepared to on 22”x34” format sheets.

Plan view will include:

1. Roadway centerlines and baselines
2. Pavement edges for all improvements
3. Lane and pavement width dimensions
4. Proposed structure locations
5. Direction of traffic flow on all roadway, and arrows indicating the number of lanes
6. Existing utilities and structures
7. Benchmark information
8. Radius callouts
9. Curb locations
10. Pavement Details

Profile view will include:

1. Existing and proposed profiles along the proposed centerline

2. Existing and Proposed Grade Lines for pavement and natural ground along the project centerline.

Note: Storm Sewer Plan and Profiles and Roadway Plan and Profiles will be included on the same Sheet.

Other Plans Plan sheets include:

1. Horizontal and Vertical Alignment Data Sheets
2. Removal (Demo) Sheets

c. Cut and Fill Quantities. The Engineer shall develop an earthwork analysis to determine cut and fill quantities and provide design cross sections at 100 feet intervals.

d. Pavement Design. CobbFendley shall incorporate the pavement design as recommended by Geotechnical Study.

II. DRAINAGE

a. Final Drainage Impact Analysis - The Preliminary Drainage Impact Analysis performed during the preliminary phase shall be updated based on the approved Geometric Project Layout. The impacts shall be determined based on the increase in impervious cover and change in time of concentration and shall be quantified at each drainage outfall. The impacts shall be determined in terms of increases in peak flows and runoff volumes. Drainage areas and hydrologic parameters shall be updated based on the drainage design for each outfall. Existing and proposed condition hydrographs shall also be updated to determine the required detention volume. A routing analysis shall be performed to determine the final detention volume and size the outlet restrictor. The routing analysis shall be performed using XP-SWMM.

b. Storm Sewer, Culvert and Outfall Design

Final Design Plans will consist of:

1. Storm sewer design analyzed per League City Master Drainage Plan Dated December 2010.
2. Storm sewer plan and profile sheets showing inlets, laterals, trunk line(s) and outfall(s) *Note: (Storm Sewer Plan and Profiles and Roadway Plan and Profiles will be included on the same Sheet.)*
3. Drainage area map(s)
4. Hydraulic data sheet(s)
5. Proposed mitigation facility and/or outfall layout(s)

6. Miscellaneous drainage detail sheet(s)
7. Coordinate and Submit plans to HCFCD for approval

III. STORMWATER POLLUTION PREVENTION PLAN (SW3P)

CobbFendley will prepare SW3P sheets and details based on the latest NPDES, Harris County Stormwater Quality Standards and City standards to minimize the potential impact to receiving waterways. The SW3P sheets will include:

1. Erosion control measures to be used
2. Locations of erosion control devices
3. Phasing of erosion control measures
4. Permanent erosion control measures
5. Erosion control measure detail sheet(s)

IV. UTILITY COORDINATION – CobbFendley will perform the utility and investigation work involving the research and identification of all private and public utilities within the projects limits. This will include:

1. Researching the existence of public utilities such as sanitary, storm sewer, and waterlines within the project limits

2. Request any additional information from private (CenterPoint Energy, CenterPoint Electric, TNMP, Frontier, AT&T and Others within Project corridor) and pipeline utilities, regarding locations of facilities within the proposed project limits.

3. Update existing Utility Sheet for the proposed project limits.

4. Update conflict list to identify all potential conflicts between the existing utilities and the proposed project improvements.

5. Coordinate with Utility Company's on plans for relocations and provide updated project design information.

V. PERMANENT SIGNING AND PAVEMENT MARKING PLAN

a. Signing. CobbFendley will prepare drawings identifying and locating the signs within the project limits. Proposed signs will be illustrated and numbered on plan sheets.

b. Pavement Marking. CobbFendley will prepare plan sheets showing pavement markings and channelization devices. CobbFendley will select pavement markings from the latest City standards.

The following information will be provided on the sign and pavement marking layouts:

1. Roadway layout.
2. Center line with station numbering.
3. Culverts and other structures that present a hazard to traffic.
4. Location of utilities.
5. Existing signs to remain or to be relocated.
6. Proposed signs (illustrated, numbered and size).
7. Proposed markings (illustrated and quantified) which include pavement markings, object markings and delineation.
8. Proposed delineators, object markers, and mailboxes.
9. The location of roadways, intersections, and pedestrian crossings.
10. The number of lanes in each section of proposed roadway
11. Right-of-way limits.
12. Direction of traffic flow on all roadways.

VI. TRAFFIC CONTROL PLAN – CobbFendley will prepare Traffic Control Plan (TCP) sheets in accordance with the Texas Manual on Uniform Traffic Control Devices (TMUTCD) for Streets and Highways (latest edition). Plans sheets will include the following:

1. Written narrative of the construction sequencing and work activities per phase.

2. Existing and proposed traffic control devices (regulatory signs, warning signs, guide signs, route markers, construction pavement markings, barricades, flag personnel, temporary traffic signals, etc.) to be used to handle traffic during each construction sequence.

3. Typical sections for each phase

4. Proposed traffic control devices at grade intersections during each construction phase (stop signs, flagperson, signals, etc.).

5. Temporary roadways, structures and detours required to maintain lane continuity throughout the construction phasing.

6. Continuous, safe access to each adjacent property during all phases of construction and to preserve existing access.

7. Temporary drainage to replace existing drainage disturbed by construction activities or to drain detour pavement.

8. Interim signing for every phase of construction. Interim signing must include regulatory, warning, construction, route, and guide signs.

9. Maintain continuous access to abutting properties during all phases of the TCP.

VII. WATERLINE AND SANITARY FORCE MAIN DESIGN – CobbFendley will prepare plan and profile sheets showing the proposed waterline along the project limits. Plan and profiles sheet will include the following:

1. Proposed waterline alignment as it relates to the project centerline. (Station and Offset from Roadway centerline)

2. Starting and ending locations as well as connections along the alignment to existing waterline facilities.

3. Any necessary service lateral (short and long side) connections

4. Proposed water valve(s) locations

5. Proposed and fire hydrant(s) locations

6. Vertical and Horizontal Offsets

7. Clearances between existing and proposed utilities

8. Depth below finished ground profile

9. Water detail sheets (City of League City Standard Sheet)

VIII. MILESTONE SUBMITTALS

CobbFendley shall provide the following information at each submittal:

a. 60% Milestone Submittal:
- 2 sets of 22”x34” and 2 sets of 11”x17” plan sheets for City review.
- Opinion of Probable Construction Cost
- Digital Copy of the previous items in .pdf format

b. 90% Milestone Submittal:
- 2 sets of 22”x34” and 2 sets of 11”x17” plan sheets for City review.
- 1 set of project manual with specifications for City Review.
- Opinion of Probable Construction Cost
- Construction schedule.

- Digital Copy of the previous items in .pdf format

c. Final Milestone Submittal:

- 2 sets of 22”x34” and 2 sets of 11”x17” plan sheets
- 1 set of project manual with specifications
- Revised supporting documents from 95% review comments.
- Opinion of Probable Construction Cost
- Construction schedule.
- Digital Copy of the previous items in .pdf format

IX. PROJECT MANUAL, SPECIFICATIONS AND GENERAL NOTES - CobbFendley will prepare a Project Manual including the City’s standard front end documents, standard specifications, special specifications, special provisions and the appropriate reference items. The Engineer shall prepare General Notes from the City’s *Master List of General Notes*, Special Specifications and Special Provisions for inclusion in the plans and bidding documents.

X. PROJECT MANAGEMENT - This task is to provide the overall management of the contract which includes:

1. Project scheduling
2. Project invoicing
3. Monthly progress reports
4. Attend coordination meetings
5. Progress review meetings (limited to once a month)
6. Coordination with sub-consultants

B. ADDITIONAL SERVICES

I. RIGHT-OF-WAY - All survey work will be in accordance with Board Rule 663.15, as promulgated by the Texas Board of Professional Land Surveyors. CobbFendley will locate the existing ROW within the project limits and prepare a layout map for the project. ROW Mapping includes the performance of on the ground surveys and preparation of parcel maps, legal descriptions (metes and bounds descriptions), and right-of-way maps. The purpose of right-of-way mapping is to prepare documents suitable for the acquisition of real property interests and the probable issuance of a title policy. **NOTE: CITY WILL CONDUCT LAND ACQUISTION OF PARCELS.**

a. Right-of-Way Map

The Engineer’s Surveyor shall field locate items such as: property corners, existing right-of-way markers, improvements, and visible utilities.

The Engineer's Surveyor shall prepare a right-of-way map for each proposed right-of-way project.

Plan sheets must include the following items of information:

1. Proposed right-of-way lines delineated with appropriate bearings, distances, and curve data.

2. Existing right-of-way lines delineated with appropriate bearings, distances, and curve data to the extent necessary to describe the individual parcels of land to be acquired.

3. The proposed project baseline alignment delineated with appropriate bearings, distances, and curve data.

4. Proposed paving lines combined with relevant existing paving lines must be shown to the extent necessary to compile a complete picture of proposed traffic movements.

5. Property lines must be delineated with appropriate bearings, distances, and curve data as needed.

6. A north arrow must be shown on each sheet, and, if possible, located in the upper right corner of the sheet.

7. Intersecting and adjoining public right-of-ways must be shown and identified by name, right-of-way width, and recording data.

8. Easements and fee strips must be shown and identified by width, owner, and recording data.

9. Building lines or set-back lines must be shown and identified.

10. Visible improvements located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line.

11. Visible utilities located within the proposed right-of-way corridor or within 50 feet of a proposed right-of-way line.

12. Visible location of vents and filler caps of underground fuel storage tanks situated within the proposed right-of-way corridor or within 50 feet of the corridor.

The following deliverables will be provided as part of this task:

- Preliminary Map showing the proposed schematic and existing right-of-way.

- Initial Right-of-Way map

- Final Right-of-Way map

b. Parcel Descriptions

CobbFendley will prepare a Parcel Description for each parcel or tract consisting of two parts: (1) a metes and bounds description of the property and (2) a parcel plat. Each part of a Parcel Description must be signed and sealed by a RPLS. Following will be provided to the City for land acquisition services:

1. Metes and bounds description will be prepared for each parcel of land to be acquired. ***(Proposal is based on the need for 7 Parcels Descriptions)***

2. A parcel plat will be prepared for each parcel of land to be acquired. Parcel plats will include each and every item of information shown on the right-of-way map which concerns the individual parcel.

Note: Each addition parcel description beyond the proposed 7 parcels, will be at a cost of $3,600 per additional parcel description.

II. ROUNDABOUT DESIGN – Once the traffic intersection analysis is completed as part of the Preliminary Engineering Report and approved by the City, in which it recommends a roundabout be used at the intersection of Grissom Road and West NASA Road, then CobbFendley will in addition to the base design add the necessary design elements for the use of a roundabout. These additional or expanded design elements include:

1. Utility modifications for a larger R.O.W footprint.
2. Roadway geometric modifications to accommodate Roundabout
3. Roundabout geometric design
4. Sidewalk/Trail alignment
5. Drainage area and storm sewer modifications
6. Additional Pavement Marking and Signage Requirements

PHASE 3 – BID PHASE

CobbFendley shall perform the following tasks:

a. Reproduce and disseminate bid sets to appropriate plan rooms and coordinate with purchasing department with bid documents.

b. Conduct pre-bid meeting and attend the Bid Opening.

c. Respond in writing to questions from Bidders and prepare Addenda as necessary.

d. Prepare Engineer's Recommendation of Award Letter that includes the following required content:

1. Check for math errors and reconcile any mathematical discrepancies
2. Review for unbalance bid items and determine responsiveness and responsibility of low bidders.
3. Certify Bid Tabulation including Engineer's estimate
4. Review of Bidder's financial standing and references provided
5. Explanation of discrepancies between the Engineer's estimate and bids
6. Recommendation to award

e. Produce and transmit for execution with the Notice of Intent to Award (NOI).

f. Coordinate contract execution for contractor.

PHASE 4 – CONSTRUCTION ADMINSTRATION

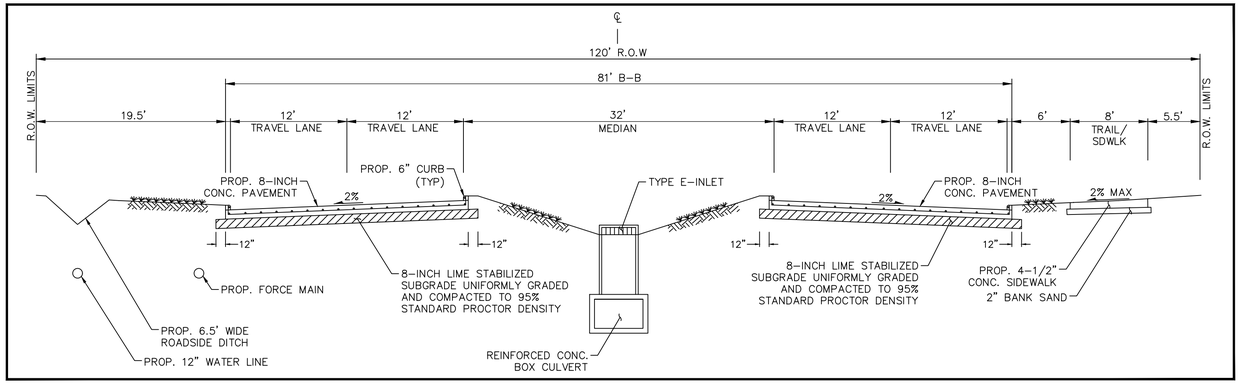
CobbFendley shall provide Construction Administration These services shall include, but are not limited to the following:

a. Attend preconstruction meeting
b. Attend field meetings and make visits to site
    1. 4 lane Construction – 15 months
    2. Senior PM - 2 Visits per month, with one of those being the Progress Meeting
    3. Estimate 4hrs per Visit
c. Calculate quantities and assist in preparing change orders
d. Review and approval of submittals and shop drawings
e. Responding to requests for information (RFIs)
f. Attend Substantial Completion Inspection and Prepare Punchlist
g. Attend Final Completion Inspection
h. Review Contractors Pay Applications for Approval
i. Prepare Record Drawings *(Based on Contractors Mark-ups)*

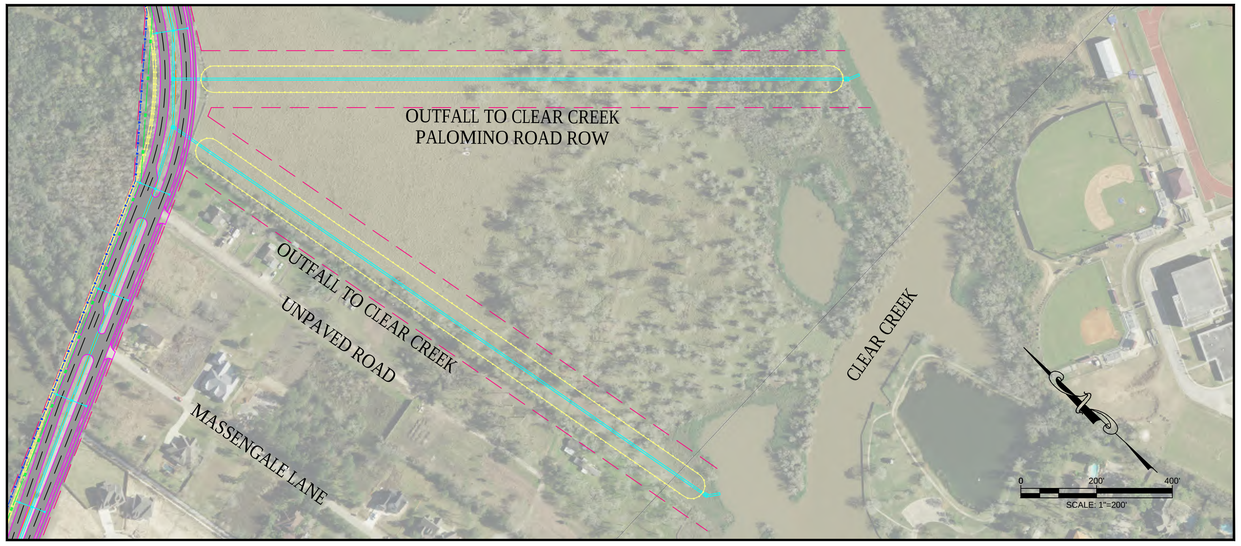
EXCLUSIONS FROM THE SCOPE OF SERVICES:

The services described above are the identified Basic and Additional Services for this assignment. Other items that may arise during the course of the project that the City may wish to add to the scope of services shall be deemed as ADDITIONAL SERVICES. CobbFendley shall undertake such additional services as assigned by the City upon written direction from the City. Examples of such items are as follows:

- Street lighting design and coordination
- Intersection design or study to accommodate Palomino Road or other future roadways connecting to Grissom Road.
- Traffic light design or warrant study at Grissom Road and West NASA Road
- Bidding Project more than once
- Obtaining Construction Permits
- Quality Control (QC) inspections, full or part time, during the construction phase of the project.
- Any other services not specifically included within the description of the Basic or Additional Services described above.



TYPICAL SECTION



OUTFALL DETAIL

LEGEND

- ALIGNMENT (CENTERED ON 120' ROW)
- ROW
- EDGE OF PAVEMENT
- CONCRETE PAVEMENT
- ASPHALT TRANSITION
- WHITE LANE STRIPING (ONE WAY TRAFFIC, 12' LANES)
- YELLOW LANE STRIPING (TWO WAY TRAFFIC)
- W — 12" WATER LINE
- SS — FORCE MAIN
- STORM SEWER
- ROADSIDE DITCH

0 200' 400'
SCALE: 1"=200'

CITY OF LEAGUE CITY, TEXAS

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EXHIBIT A
GRISSOM ROAD
SCHEMATIC LAYOUT

EXHIBIT B

Client: City of League City

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge

Option 1 - Four 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
BASE BID					
SECTION 1 - SITE PREPARATION					
1	Mobilization (Max 5% of Total Base Bid Price)	LS	1	$ 465,000.00	$ 465,000.00
2	Clearing and Grubbing	AC	4	$ 3,000.00	$ 12,000.00
3	Remove and Dispose of Asphalt Pavement and Base (All Depths) Including all Saw-Cutting Required (Two Lane Existing Road, 25' Wide, 5270' Long, Including Intersection at W NASA Road Bridge)	SY	16,990	$ 11.00	$ 186,890.00
4	Remove Asphalt/Concrete Driveways, Complete in Place	SY	350	$ 15.00	$ 5,250.00
5	Remove and Dispose Off Site Existing Storm Sewer Pipe (All Sizes) (Culverts Under Driveways)	LF	200	$ 20.00	$ 4,000.00
6	Utility Adjustments During Construction	LS	1	$ 50,000.00	$ 50,000.00
				SUBTOTAL SECTION 1	**$ 723,140.00**
SECTION 2 - PAVING					
7	8-Inch Reinforced Concrete Pavement, Complete in Place (Four 12' Lanes, 5270' Long, Including Intersection)	SY	31,272	$ 75.00	$ 2,345,400.00
8	8-Inch Lime Treatment, Complete in Place	SY	32,771	$ 5.00	$ 163,855.00
9	Lime (Type B, 8% Lime by Dry Weight of Soil), Complete in Place	TON	790	$ 190.00	$ 150,100.00
10	Concrete Pavement Header, Complete in Place	LF	100	$ 15.00	$ 1,500.00
11	6-Inch Concrete Curb, Complete in Place	LF	21,385	$ 3.50	$ 74,847.50
12	Reinforced Concrete Driveways, Complete in Place	SF	3,592	$ 7.00	$ 25,144.00
13	4-1/2 Inch Reinforced Concrete Trail/Sidewalk, Complete in Place (8' Wide, Southeast Side of Road)	SF	41,500	$ 6.00	$ 249,000.00
14	2-Inch Bank Sand, Complete in Place (Under Sidewalk)	CY	256	$ 100.00	$ 25,600.00
15	Handicap Ramps, Complete in Place	EA	10	$ 1,450.00	$ 14,500.00
16	Select Earth Material for Embankment, Complete in Place (1' Under Subgrade, Four 12' Lanes, 5270' Long)	CY	5,462	$ 15.00	$ 81,930.00
17	2-Inch Asphalt Pavement for Asphalt Transitions, Complete in Place	TON	23	$ 200.00	$ 4,600.00
18	8-Inch Black Base (Type B) for Asphalt Transitions, Complete in Place	TON	104	$ 90.00	$ 9,360.00
				SUBTOTAL SECTION 2	**$ 3,145,836.50**
SECTION 3 - STORM SEWER					
19	Reinforced Concrete Box Storm Sewer within Median, Complete in Place	LF	4,002	$ 300.00	$ 1,200,600.00
20	Type E Inlet (All Depths) within Median, Complete in Place (Approximately 300' Spacing)	EA	17	$ 3,000.00	$ 51,000.00
21	Excavation within Median Including Haul-Off (32' Wide, 5' Deep)	CY	18,055	$ 8.00	$ 144,440.00
22	Type E Inlet (All Depths) within Roadside Ditch, Complete in Place (Approximately 300' Spacing, Northwest Side of Road)	EA	14	$ 3,000.00	$ 42,000.00
23	Type “C-1” Inlet (All Depths)	EA	32	$ 3,500.00	$ 112,000.00
24	24" Reinforced Concrete Pipe, Complete in Place (Laterals)	LF	1,471	$ 80.00	$ 117,680.00
25	Roadside Ditch Grading, Complete in Place (Northwest Side of Road)	LF	4,682	$ 7.00	$ 32,774.00
				SUBTOTAL SECTION 3	**$ 1,700,494.00**

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge
Option 1 - Four 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
SECTION 4 - SWPPP					
26	Storm Water Pollution Prevention Control, Including TPDES Requirements	LS	1	$ 2,500.00	$ 2,500.00
27	Erosion/Sediment Control in Accordance with TPDES Requirements, Including Notice of Intent (NOI) and Notice of Termination (NOT)	LS	1	$ 1,000.00	$ 1,000.00
28	SWPPP Inspection and Maintenance, and Reporting	LS	1	$ 1,500.00	$ 1,500.00
29	Furnish, Install, and Remove Reinforced Filter Fabric Barrier, Complete in Place (Both Sides of Road, 5270' Long)	LF	10,540	$ 3.00	$ 31,620.00
30	Furnish Stabilized Construction Entrance/Exit, Complete in Place	SY	89	$ 20.00	$ 1,778.00
31	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Within Median)	AC	2	$ 3,000.00	$ 6,000.00
32	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Northwest Side to ROW)	AC	3	$ 3,000.00	$ 9,000.00
33	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Southeast Side to ROW)	AC	2	$ 3,000.00	$ 6,000.00
			SUBTOTAL SECTION 4		**$ 59,398.00**
SECTION 5 - TRAFFIC CONTROL AND REGULATION					
34	Traffic Control and Regulations	LS	1	$ 15,000.00	$ 15,000.00
35	2-Inch Temporary Asphalt Pavement, Complete in Place (One 11' Lane, 5270' Long)	TON	709	$ 200.00	$ 141,800.00
36	4-Inch Temporary Base, Complete in Place (One 11' Lane, 5270' Long)	TON	1,130	$ 150.00	$ 169,500.00
37	Remove Existing Mailboxes, Installation of Temporary Mailbox Bank (Multiple Mount, Medium or Large) to Replace Existing Mailboxes for All Phases of Construction, Replace Existing Mailboxes to Permanent Location Upon Completion of Construction Work, Complete in Place	LS	1	$ 2,000.00	$ 2,000.00
			SUBTOTAL SECTION 5		**$ 328,300.00**
SECTION 6 - WATER ITEMS					
38	12-Inch C900 PVC Water Line (Auger Construction)	LF	5,300	$ 80.00	$ 424,000.00
39	8-Inch C900 PVC Water Line	LF	500	$ 65.00	$ 32,500.00
40	12-Inch Gate Valve and Box	EA	4	$ 3,500.00	$ 14,000.00
41	8-Inch Gate Valve and Box	EA	4	$ 2,000.00	$ 8,000.00
42	Wet Connections	EA	2	$ 3,000.00	$ 6,000.00
43	Fire Hydrant Assembly	EA	13	$ 4,700.00	$ 61,100.00
44	Service Connections	EA	4	$ 1,500.00	$ 6,000.00
45	Cut, Plug and Abandon Water Line, All Sizes	LS	1	$ 5,000.00	$ 5,000.00
46	Remove and Salvage Fire Hydrant Assembly	EA	2	$ 1,000.00	$ 2,000.00
47	Abandon Gate Valve, All Sizes	EA	5	$ 500.00	$ 2,500.00
			SUBTOTAL SECTION 6		**$ 561,100.00**
SECTION 7 - WASTEWATER ITEMS					
48	Relocate Existing Force Main (Abigail Lane to West NASA)	LF	5,110	$ 80.00	$ 408,800.00
49	Air Release Valve Assembly, Complete in Place	EA	4	$ 5,000.00	$ 20,000.00
			SUBTOTAL SECTION 7		**$ 428,800.00**
SECTION 8 - PAVEMENT MARKINGS					
50	Type I Pavement Markings (4" Thermoplastic White Dashed), Complete in Place	LF	9,615	$ 1.00	$ 9,615.00
51	Type I Pavement Markings (4" Thermoplastic Yellow Dashed), Complete in Place	LF	1,296	$ 1.00	$ 1,296.00

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge
Option 1 - Four 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
52	Reflective Pavement Marker Type I (W) 24" (Solid) Stop Bar, Complete in Place	LF	110	$ 15.00	$ 1,650.00
53	Furnish and Install Ground Mount "Stop" Sign, Complete in Place	EA	7	$ 175.00	$ 1,225.00
54	Reflective Pavement Markers, for Fire Hydrant, Type II-A-A, Blue-Blue, Complete in Place	EA	13	$ 10.00	$ 130.00
				SUBTOTAL SECTION 8	**$ 13,916.00**
SECTION 9 - SUPPLEMENTAL ITEMS					
55	Cement Stabilized Sand for Subgrade, Complete in Place (Engineer's Approval Required)	CY	100	$ 30.00	$ 3,000.00
56	Water Service Reconnections, Short Side	EA	1	$ 900.00	$ 900.00
57	Water Service Reconnections, Long Side	EA	1	$ 1,500.00	$ 1,500.00
58	Installation of Water Meter Boxes, Provided by the City	EA	1	$ 200.00	$ 200.00
59	Sewer Service Reconnections	EA	1	$ 1,800.00	$ 1,800.00
60	Power Pole Relocation	LS	1	$ 10,000.00	$ 10,000.00
				SUBTOTAL SECTION 9	**$ 17,400.00**
ALTERNATE A - CLOSED SYSTEM - OUTFALL TO CLEAR CREEK (PALOMINO ROAD ROW OR OTHER ROW)					
61	Clearing and Grubbing (30' x 1800')	AC	1	$ 3,000.00	$ 3,000.00
62	Reinforced Concrete Box Storm Sewer Outfall to Clear Creek, Complete in Place	LF	1,800	$ 300.00	$ 540,000.00
63	Outfall Structure Including Cleaning Structure (Trash Rack or Similar Structure)	EA	1	$ 100,000.00	$ 100,000.00
64	8'X8' Junction Box Structure, Complete in Place	EA	2	$ 8,000.00	$ 16,000.00
				SUBTOTAL ALTERNATE A	**$ 659,000.00**
ALTERNATE B - OPEN SYSTEM - OUTFALL TO CLEAR CREEK (PALOMINO ROAD ROW OR OTHER ROW)					
65	Clearing and Grubbing (150' x 1800')	AC	6	$ 3,000.00	$ 18,000.00
66	Reinforced Concrete Box Storm Sewer, Complete in Place (Under Road)	LF	120	$ 300.00	$ 36,000.00
67	Outfall Structure Including Cleaning Structure (Trash Rack or Similar Structure)	EA	1	$ 100,000.00	$ 100,000.00
68	8'X8' Junction Box Structure, Complete in Place	EA	2	$ 8,000.00	$ 16,000.00
69	Excavation for In-Line Detention Including Haul-Off (70' Wide, 5' Flat Bottom, 5' Depth, 30' Maintenance Berms)	CY	12,500	$ 20.00	$ 250,000.00
				SUBTOTAL ALTERNATE B	**$ 420,000.00**
				TOTAL SECTIONS 1-9	**$ 6,978,384.50**
				25% CONTINGENCY	**$ 1,744,596.00**
				TOTAL BASE BID PRICE (INCLUDING ALTERNATE A)*	**$ 9,381,980.50**
				TOTAL BASE BID PRICE (INCLUDING ALTERNATE B)*	**$ 9,142,980.50**

*Palomino Road's ROW and the other ROW option are the same length to the Clear Creek outfall resulting in the same estimated cost.

EXHIBIT C

Client: City of League City

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge

Option 2 - Two 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
BASE BID					
SECTION 1 - SITE PREPARATION					
1	Mobilization (Max 5% of Total Base Bid Price)	LS	1	$ 465,000.00	$ 465,000.00
2	Clearing and Grubbing	AC	4	$ 3,000.00	$ 12,000.00
3	Remove and Dispose of Asphalt Pavement and Base (All Depths) Including all Saw-Cutting Required (Two Lane Existing Road, 25' Wide, 5270' Long, Including Intersection at W NASA Road Bridge)	SY	16,990	$ 11.00	$ 186,890.00
4	Remove Asphalt/Concrete Driveways, Complete in Place	SY	350	$ 15.00	$ 5,250.00
5	Remove and Dispose Off Site Existing Storm Sewer Pipe (All Sizes) (Culverts Under Driveways)	LF	200	$ 20.00	$ 4,000.00
6	Utility Adjustments During Construction	LS	1	$ 50,000.00	$ 50,000.00
				SUBTOTAL SECTION 1	**$ 723,140.00**
SECTION 2 - PAVING					
7	8-Inch Reinforced Concrete Pavement, Complete in Place (Two 12' Lanes Including Median Areas, 5270' Long)	SY	17,256	$ 75.00	$ 1,294,200.00
8	8-Inch Lime Treatment, Complete in Place	SY	18,682	$ 5.00	$ 93,410.00
9	Lime (Type B, 8% Lime by Dry Weight of Soil), Complete in Place	TON	451	$ 190.00	$ 85,690.00
10	Concrete Pavement Header, Complete in Place	LF	44	$ 15.00	$ 660.00
11	6-Inch Concrete Curb, Complete in Place	LF	15,245	$ 3.50	$ 53,357.50
12	Reinforced Concrete Driveways, Complete in Place	SF	3,592	$ 7.00	$ 25,144.00
13	4-1/2 Inch Reinforced Concrete Sidewalk, Complete in Place (8' Wide, Southeast Side of Road)	SF	41,500	$ 6.00	$ 249,000.00
14	2-Inch Bank Sand, Complete in Place (Under Sidewalk)	CY	256	$ 100.00	$ 25,600.00
15	Handicap Ramps, Complete in Place	EA	8	$ 1,450.00	$ 11,600.00
16	Select Earth Material for Embankment, Complete in Place (1' Under Subgrade,Two 12' Lanes, 5270' Long)	CY	3,114	$ 15.00	$ 46,710.00
17	2-Inch Asphalt Pavement for Asphalt Transitions, Complete in Place	TON	23	$ 200.00	$ 4,600.00
18	8-Inch Black Base (Type B) for Asphalt Transitions, Complete in Place	TON	104	$ 90.00	$ 9,360.00
				SUBTOTAL SECTION 2	**$ 1,899,331.50**
SECTION 3 - STORM SEWER					
19	Reinforced Concrete Box Storm Sewer within Median, Complete in Place	LF	4,002	$ 300.00	$ 1,200,600.00
20	Type E Inlet (All Depths) within Median, Complete in Place (Approximately 300' Spacing)	EA	17	$ 3,000.00	$ 51,000.00
21	Excavation within Median Including Haul-Off (32' Wide, 5' Deep)	CY	18,055	$ 8.00	$ 144,440.00
22	Type “C-1” Inlet (All Depths)	EA	17	$ 3,500.00	$ 59,500.00
23	24" Reinforced Concrete Pipe, Complete in Place (Laterals)	LF	875	$ 80.00	$ 70,000.00
				SUBTOTAL SECTION 3	**$ 1,525,540.00**
SECTION 4 - SWPPP					
24	Storm Water Pollution Prevention Control, Including TPDES Requirements	LS	1	$ 2,500.00	$ 2,500.00
25	Erosion/Sediment Control in Accordance with TPDES Requirements, Including Notice of Intent (NOI) and Notice of Termination (NOT)	LS	1	$ 1,000.00	$ 1,000.00
26	SWPPP Inspection and Maintenance, and Reporting	LS	1	$ 1,500.00	$ 1,500.00

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge
Option 2 - Two 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
27	Furnish, Install, and Remove Reinforced Filter Fabric Barrier, Complete in Place (Both Sides of Road, 5270' Long)	LF	10,540	$ 3.00	$ 31,620.00
28	Furnish Stabilized Construction Entrance/Exit, Complete in Place	SY	89	$ 20.00	$ 1,778.00
29	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Within Median)	AC	2	$ 3,000.00	$ 6,000.00
30	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Northwest Side to ROW)	AC	5	$ 3,000.00	$ 15,000.00
31	Furnish, Install, Fertilize and Water Hydro-Mulch Seeding for Erosion Control, Complete in Place (Southeast Side to ROW)	AC	2	$ 3,000.00	$ 6,000.00
				SUBTOTAL SECTION 4	**$ 65,398.00**
SECTION 5 - TRAFFIC CONTROL AND REGULATION					
32	Traffic Control and Regulations	LS	1	$ 15,000.00	$ 15,000.00
33	2-Inch Temporary Asphalt Pavement, Complete in Place (One 11' Lane, 5270' Long)	TON	709	$ 200.00	$ 141,800.00
34	4-Inch Temporary Base, Complete in Place (One 11' Lane, 5270' Long)	TON	1,130	$ 150.00	$ 169,500.00
35	Remove Existing Mailboxes, Installation of Temporary Mailbox Bank (Multiple Mount, Medium or Large) to Replace Existing Mailboxes for All Phases of Construction, Replace Existing Mailboxes to Permanent Location Upon Completion of Construction Work, Complete in Place	LS	1	$ 2,000.00	$ 2,000.00
				SUBTOTAL SECTION 5	**$ 328,300.00**
SECTION 6 - WATER ITEMS					
36	12-Inch C900 PVC Water Line (Auger Construction)	LF	5,300	$ 80.00	$ 424,000.00
37	8-Inch C900 PVC Water Line	LF	500	$ 65.00	$ 32,500.00
38	12-Inch Gate Valve and Box	EA	4	$ 3,500.00	$ 14,000.00
39	8-Inch Gate Valve and Box	EA	4	$ 2,000.00	$ 8,000.00
40	Wet Connections	EA	2	$ 3,000.00	$ 6,000.00
41	Fire Hydrant Assembly	EA	13	$ 4,700.00	$ 61,100.00
42	Service Connections	EA	4	$ 1,500.00	$ 6,000.00
43	Cut, Plug and Abandon Water Line, All Sizes	LS	1	$ 5,000.00	$ 5,000.00
44	Remove and Salvage Fire Hydrant Assembly	EA	2	$ 1,000.00	$ 2,000.00
45	Abandon Gate Valve, All Sizes	EA	5	$ 500.00	$ 2,500.00
				SUBTOTAL SECTION 6	**$ 561,100.00**
SECTION 7 - WASTEWATER ITEMS					
46	Relocate Existing Force Main (Abigail Lane to West NASA Bridge)	LF	5,110	$ 80.00	$ 408,800.00
47	Air Release Valve Assembly, Complete in Place	EA	4	$ 5,000.00	$ 20,000.00
				SUBTOTAL SECTION 7	**$ 428,800.00**
SECTION 8 - PAVEMENT MARKINGS					
48	Type I Pavement Markings (4" Thermoplastic White Dashed), Complete in Place	LF	9,615	$ 1.00	$ 9,615.00
49	Type I Pavement Markings (4" Thermoplastic Yellow Dashed), Complete in Place	LF	1,296	$ 1.00	$ 1,296.00
50	Reflective Pavement Marker Type I (W) 24" (Solid) Stop Bar, Complete in Place	LF	110	$ 15.00	$ 1,650.00
51	Furnish and Install Ground Mount "Stop" Sign, Complete in Place	EA	7	$ 175.00	$ 1,225.00
52	Reflective Pavement Markers, for Fire Hydrant, Type II-A-A, Blue-Blue, Complete in Place	EA	13	$ 10.00	$ 130.00
				SUBTOTAL SECTION 8	**$ 13,916.00**

Project Location: Grissom Road from Abigail Lane to W NASA Road Bridge
Option 2 - Two 12' Lanes, 32' Median, 120' ROW

Opinion of Probable Construction Cost

Item No.	Item Description	Unit	Quantity	Unit Price	Extended Price
SECTION 9 - SUPPLEMENTAL ITEMS					
53	Cement Stabilized Sand for Subgrade, Complete in Place (Engineer's Approval Required)	CY	100	$ 30.00	$ 3,000.00
54	Water Service Reconnections, Short Side	EA	1	$ 900.00	$ 900.00
55	Water Service Reconnections, Long Side	EA	1	$ 1,500.00	$ 1,500.00
56	Installation of Water Meter Boxes, Provided by the City	EA	1	$ 200.00	$ 200.00
57	Sewer Service Reconnections	EA	1	$ 1,800.00	$ 1,800.00
58	Power Pole Relocation	LS	1	$ 10,000.00	$ 10,000.00
				SUBTOTAL SECTION 9	**$ 17,400.00**
ALTERNATE A - CLOSED SYSTEM - OUTFALL TO CLEAR CREEK (PALOMINO ROAD ROW OR OTHER ROW)					
59	Clearing and Grubbing (30' x 1800')	AC	1	$ 3,000.00	$ 3,000.00
60	Reinforced Concrete Box Storm Sewer Outfall to Clear Creek, Complete in Place	LF	1,800	$ 300.00	$ 540,000.00
61	Outfall Structure Including Cleaning Structure (Trash Rack or Similar Structure)	EA	1	$ 100,000.00	$ 100,000.00
62	8'X8' Junction Box Structure, Complete in Place	EA	2	$ 8,000.00	$ 16,000.00
				SUBTOTAL ALTERNATE A	**$ 659,000.00**
ALTERNATE B - OPEN SYSTEM - OUTFALL TO CLEAR CREEK (PALOMINO ROAD ROW OR OTHER ROW)					
63	Clearing and Grubbing (150' x 1800')	AC	6	$ 3,000.00	$ 18,000.00
64	Reinforced Concrete Box Storm Sewer, Complete in Place (Under Road)	LF	120	$ 300.00	$ 36,000.00
65	Outfall Structure Including Cleaning Structure (Trash Rack or Similar Structure)	EA	1	$ 100,000.00	$ 100,000.00
66	8'X8' Junction Box Structure, Complete in Place	EA	2	$ 8,000.00	$ 16,000.00
67	Excavation for In-Line Detention Including Haul-Off (70' Wide, 5' Flat Bottom, 5' Depth, 30' Maintenance Berms)	CY	12,500	$ 20.00	$ 250,000.00
				SUBTOTAL ALTERNATE B	**$ 420,000.00**
				TOTAL SECTIONS 1-9	**$ 5,562,925.50**
				25% CONTINGENCY	**$ 1,390,731.00**
				TOTAL BASE BID PRICE (INCLUDING ALTERNATE A)*	**$ 7,612,656.50**
				TOTAL BASE BID PRICE (INCLUDING ALTERNATE B)*	**$ 7,373,656.50**

*Palomino Road's ROW and the other ROW option are the same length to the Clear Creek outfall resulting in the same estimated cost.

BIO-WEST

February 6, 2019

Brad Matlock, P.E.
Cobb, Fendley, & Associates, Inc.
13430 Northwest Freeway, Suite 1100
Houston, Texas 77040

Re: Proposal for Environmental Services
Cobb, Fendley, & Associates, Inc.
Grissom Road Improvement, Expansion, & Associated Stormwater Outfall into Clear Creek League City, Harris County, Texas

Dear Mr. Matlock:

Thank you for allowing BIO-WEST, Inc. (BIO-WEST) the opportunity to provide Cobb, Fendley, & Associates, Inc. (CobbFendley) with a cost estimate for the following environmental services:

1. Waters of the U.S. Delineation
2. Archeological Desktop Site File Review
3. Phase I Environmental Site Assessment
4. Environmental Impact Analysis
5. Section 404 – Clean Water Act – Permits
   a. Nationwide Permit – If project impacts less than 0.50 acres of jurisdictional area.
   b. Standard Individual Permit – If more than 0.50 acres of jurisdictional area are impacted.
6. Archeological Pedestrian Field Survey

As discussed between BIO-WEST and Cobb-Fendley, the project consists of the improvement and expansion of existing Grissom Road and the construction of a new outfall structure into Clear Creek located in Harris County, Houston, Texas. This proposal outlines each of these environmental services as tasks below. The subject property area is shown below. Average survey width along Grissom Road is estimated to be 200 feet and average survey width for the outfall area is 500 feet.

Task 1 – Waters of the U.S Delineation

BIO-WEST will assess the project site to map onsite aquatic features potentially regulated by the United States Army Corps of Engineers (USACE) under Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act (RHA). Field efforts will be designed to identify and delineate the boundaries of potentially jurisdictional waters of the U.S. at the project site. Our methods would include:

- Review of available data, such as topographic maps, aerial photographs, hydric soils lists, public databases, etc.
- Field reconnaissance of the project site for identification of wetlands and other waterbodies
- Use of a Trimble® Global Positioning System (GPS) device with sub-meter accuracy to mark each sampling location and the extent of any wetlands or waterbodies within the project site boundaries per USACE standards

This effort will identify and document the presence of waters of the U.S., including wetlands, within the project site and include a delineation of these resources as specified in the 1987 USACE Wetlands Delineation Manual, the 2010 Regional Supplement to the USACE of Engineers Wetland Delineation Manual: Atlantic and Gulf Coastal Plain Region – Version 2.0, Regulatory Guidance Letter 05-05 – Ordinary High Water Mark (OHWM) Identification, and other applicable industry guidance and standards. All aquatic features will be classified in the field by either simplified United States Fish and Wildlife Department's (USFWS) Cowardin System of Wetland Classification for wetlands, or observable or recorded flow regime per current United States Geologic Survey (USGS) and USACE definitions.

Our delineation report will include documentation required for a standard submittal to the USACE, including, but not limited to (where available):

- Project Introduction, Background Research, and Methodology
- Results and findings, including aquatic feature classification information
- BIO-WEST's professional recommendation on the jurisdictionality of all on-site aquatic features
- A vicinity map
- A waters of the U.S., including wetlands, delineation map
- A USGS topographic map
- A Federal Emergency Management Agency (FEMA) map
- A USFWS National Wetland Inventory (NWI) map
- A Natural Resource Conservation Service (NRCS) soils map
- A National Hydrography Dataset (NHD) map
- LIDAR and/or digital elevation maps (if available)
- Electronic, geo-referenced shapefiles or CAD files of delineated boundaries
- Project site photographs documenting site conditions
- USACE Wetland Delineation Data Forms for each sampling point taken during field surveys

This scope of work only proposes to identify and delineate aquatic features within the subject property and provide a written report documenting those findings to the client for their records and to assist in determining a development strategy for the property. The findings will document the potential presence or absence of Section 404/10 waterbodies within the project site; this is a critical first step in any regulatory process. All field data and recommendations would be valid for a period of five years from the date of each report.

Task 2 – Archeological Desktop Site File Review

A "desktop" level of investigation will be completed in order to determine the potential for intact, buried resources to be found in the project's construction footprint/archaeological APE. Site file research will be conducted by consulting online research archives maintained by the THC. Research objectives will be to identify all previously recorded cultural resources that may be located within the project APE and within 1.6 kilometers (1 mile) of the proposed project's APE. A review of the Texas Historic Sites Atlas, the National Register of Historic Places (NRHP) database, the list of State Archaeological Landmarks, and the list of Recorded Texas Historic Landmarks, will be reviewed. In addition, soils maps, topographic maps, and aerial photographs will be inspected in order to determine the potential for previously unrecorded archaeological sites to be present within the project footprint. The TX DOT Potential Archeological Liability Map (PALM) will be reviewed as part of the assessment.

The results of this assessment will be presented in a coordination letter. It is anticipated that a recommendation that archaeological field survey is not needed for the project; however, a survey is included in the event that the USACE requests it (see Task 6). The report will contain a brief culture history, methods, the results of research, an assessment of the potential for intact, buried cultural resources to be found within the project APE, and recommendations for further work, if necessary.

Appropriate maps will accompany the report. If the results of this assessment indicate that archaeological field survey or deep testing is required, these costs will be determined separately.

Task 3 – Phase I Environmental Site Assessment

The scope of work includes: (1) a review of readily available historical topographic maps, fire insurance maps, soil maps, and aerial photographs, (2) interviews with the property owner or occupant and agency officials from the local health and fire departments, (3) searches of state and federal records databases, (4) a site inspection, and (5) completion of a report.

In addition to the noted scope of work, BIO-WEST requests that any of the following helpful documents or reports (if they exist and are available to you) be submitted to our office to expedite the environmental assessment: (a) site assessment reports; (b) environmental audit reports; (c) environmental permits for disposal, discharge, etc.; (d) tank registration; (e) material safety data sheets (MSDS); (f) community right to know plans; (g) health and safety plans, spill prevention plans, etc.; (h) hydrogeologic reports; (I) government violations or notices; (j) hazardous waste generator notices or reports; (k) any geotechnical studies, (j) site or plat maps; (k) appraisal information (not including property value), and (I) title reports showing the chain of ownership.

BIO-WEST's proposed scope of work provides a limited but reasonable assessment of the property. The work will be conducted according to the protocols for conducting Phase 1 assessments described in the American Society for Testing and Materials (ASTM) E 1527-13 document. Investigatory work will not include: soil or groundwater sampling, asbestos, building materials, waste sampling, threatened and endangered species, wetlands, or archaeology.

Should additional testing be required, it can be performed as an additional service.

Task 4 – Waters of the U.S. Impact Assessment

The proposed project design and layout will be evaluated to identify methods to minimize jurisdictional waters and wetland impacts, if any as well as calculate impacts to the identified jurisdictional areas. BIO-WEST will also work the engineer in order to design the project around identified features in an effort to minimize environmental coordination with federal or state agencies. If jurisdictional waters and/or wetlands will be impacted by the project, an explanation of cost and technical factors, as applicable (such as discussion if there is no practicable alternative to the construction), will be included in the Water Resources Technical Report. Additionally, if required by Section 404 of the Clean Water Act, appropriate permitting and mitigation will be proposed for impacts.

Task 5 – Section 404 Clean Water Act Permitting

If impacts to jurisdictional waters of the U.S. are unavoidable, BIO-WEST will work to develop the most suitable Clean Water Act permit strategy in order to move forward with development of the Subject Property. Sections 404 of the CWA and 10 of the RHA establish programs to regulate the discharge of dredged or fill material into jurisdictional waters of the U.S. Both sections require a permit, either through application or self-certification, before any fill material may be discharged into waters of the United States, unless the activity is exempt from regulation (e.g., certain farming and forestry activities).

All proposed activities are regulated through a standard permitting process. Four types of permits are generally allowed: Regional General Permits (RGPs), Nationwide Permits (NWPs), Standard Individual Permits (SIPs), and Letters of Permission (LOPs). RGPs and NWPs are usually allowed when impacts are minimal and do not exceed a 1/2-acre or 500 linear foot threshold. A SIP is generally required for potentially significant impacts greater than 1/2 acres. LOPs are special condition IPs where impacts are significant, require greater scrutiny, or are otherwise out of the ordinary permitting framework. All permits are reviewed by the USACE, which evaluates applications under a public interest review, as well as the environmental criteria set forth in the CWA Section 404(b)(1) Guidelines, and regulations promulgated by United States Environmental Protection Agency (EPA).

SUBTASK 5A - Nationwide Permitting

If impacts to waters of the U.S. are under 0.50 acres, BIO-WEST proposes to draft a Nationwide Permit (NWP) permit application pursuant to USACE guidelines and Section 404 of the CWA for all proposed impacts to potentially jurisdictional waters of the U.S., including wetlands, on the project site. Under this scenario, BIO-WEST assumes that the Project will be limited to impacts of less than 0.50 acres to WOTUS to stay within the guidelines of the NWP program.

BIO-WEST will prepare the appropriate NWP Pre-construction Notification (PCN) for submittal to the USACE. Prior to preparing the PCN, BIO-WEST will coordinate to obtain engineering drawings showing proposed design layouts and impacts. BIO-WEST cannot complete the PCN without these documents. BIO-WEST will utilize ENG Form 4345 and attach the following to the application:

- Applicant and Applicant's Agent Name and Contact Information
- Detailed Project Description
- Detailed Project Location Information
- Detailed Description of Proposed Impacts
- Waters of the U.S. Delineation
- Threatened and Endangered Species Determination
- Cultural Resource Assessment and Recommendation

- Texas Commission on Environmental Quality (TCEQ) Tier I Checklist
- Figures and Exhibits Depicting All Proposed Impacts
- Compensatory Mitigation Plan for Unavoidable Loss to Waters of the U.S.

Once the permit application is completed, BIO-WEST will forward an electronic copy for review and comment. Following the incorporation of comments, BIO-WEST will submit the completed application to the USACE – Galveston District for review. BIO-WEST will coordinate the application throughout the remainder of the permitting process. While BIO-WEST cannot guarantee approval of the permit application, BIO-WEST will utilize its best professional judgment and the standard and care utilized by similar companies completing similar work in the USACE – Galveston District. Based on current permitting timelines, BIO-WEST estimates that an NWP will take between three and six months to obtain a decision.

BIO-WEST will perform the following under this task:

1. Draft and submit the Nationwide Permit (NWP) application and support documents to the applicant/client for review prior to submittal to the USACE. BIO-WEST must have written approval from the client authorizing BIO-WEST to submit the permit application to the USACE.
2. Attend two (2) on-site meetings with USACE and resource protection agencies, if requested.
3. Attend two (2) additional meetings with the USACE.
4. Consult with the client and engineer regarding the proposed roadway/drainage plans and alternatives.
5. Consult with the applicant regarding the appropriate Wetland Mitigation Plan (mitigation bank or onsite). If client chooses on-site mitigation, BIO-WEST can prepare the mitigation plan and conceptual design (to be proposed separately if needed).
6. Assist the applicant/client in providing the USACE build and no-build alternative analysis.

SUBTASK 5B - Standard Individual Permitting

If unavoidable impacts are greater than 0.50 acres of waters of the U.S. BIO-WEST will submit a Standard Individual Permit. In order to submit a complete standard permit application to the USACE specific project details including 30% construction and engineering drawings will be required to be shared with BIO-WEST. BIO WEST will work with the preferred engineer to acquire Project design drawings and supporting documentation.

BIO-WEST will utilize ENG Form 4345 for the permit application and attach the following:

- Applicant and Applicant's Agent Name and Contact Information
- Project Description (nature of the activity, project purpose, reason(s) for discharge, type(s) of material being discharged, surface area of wetlands or other waters, a description of avoidance, minimization, and compensation, and addresses of adjoining property owners)
- Project Location Information
- Description of Proposed Impacts
- TCEQ Tier II Questionnaire
- Threatened and Endangered Species Determination
- Cultural Resource Assessment

To address and calculate project impacts the wetland delineation information and the project plans from the engineer will be prepared. Additionally, the iHGM functional assessment and (GDSAT tool – if needed) will be prepared and included to identify the values of the existing features. Once the permit application is completed, BIO-WEST will forward an electronic copy of the application for review and comment. Following incorporation of comments, BIO-WEST will submit the completed application to the USACE – Galveston District for review. Based on previous conversations with the client, BIO-WEST understands the need to secure appropriate compensatory mitigation for the proposed project. Upon determination that impacts to jurisdictional areas are unavoidable and will require mitigation BIO-WEST will immediately begin discussions with qualified mitigation solution companies in order to seek out mitigation credits. BIO-WEST will work in order to secure the appropriate mitigation option that best suites the needs of the proposed project.

Note: This scope of services does not include the purchase of compensatory mitigation credits for wetland and/or stream impacts.

Task 6 – Archeological Cultural Resource Pedestrian Survey

The objective of the Historical, Cultural and Archeological Assessment is to evaluate the detectable existence of sites of significant historical, cultural and archeological public value on the subject site. If an applicant is requesting a permit from the USACE to fill jurisdictional wetlands or submit a federal permit (e.g., NWP), the USACE requires that the THC and USACE staff archeologist review the proposed project. The USACE cannot issue a permit to fill wetlands without the THC and USACE staff archeologist's final approval. Based upon the soil conditions and potential for finding cultural resources, the USACE under Section 106 often requires an applicant to conduct an Archeological Cultural Resource Pedestrian Survey to determine if cultural resources or historical structures are present on the property. Based upon review of the PALM Map, it is unlikely that a survey would be required, but is included in the event that the USACE requests it.

If cultural resources are found, BIO-WEST and the archeologist will coordinate with the client to discuss project options. A physical investigation for the presence of historical, cultural, or archeological indicators will be performed.

The cost for artifact curation will be determined as needed and is not included in this scope. It is assumed that the survey for the detention pond and outfalls would be conducted simultaneously (in one mobilization).

Reporting and Deliverables

Waters of the U.S. Delineation, Threatened and Endangered Species, and Cultural Review Reporting
Following on-site investigations, a delineation report will be prepared for the project site. This report will include documentation required by the USACE, including, but not limited to: project introduction, background research, methodology, results, findings, BIO-WEST's professional recommendation on the jurisdictionality of all on-site aquatic features, site maps, a waters of the U.S., including wetlands delineation map, project site photographs documenting site conditions, and USACE Wetland Delineation Data Forms for each sampling point taken during field surveys. No coordination with the USACE is proposed as part of this scope. All findings presented in this letter report would be preliminary and based on BIO-WEST's professional experience with similar projects under similar circumstances. Only the USACE and EPA can make the final jurisdictional determination.

Mapping and GIS
All geographic information data (USACE Routine Data points for waters of the U.S. and uplands, position lines, photo-points, ordinary high water mark points, etc.) from the delineation will be compiled by field crews, downloaded, and corrected via Pathfinder into ArcGIS. Data will be recorded in accordance with the USACE Galveston District's Standard GPS Protocol. BIO-WEST's GIS analysts will input this data into a master map file for CobbFendley.

Section 404 Permitting
It is BIO-WEST's understanding that this project will be able to be processed under a non PCN Nationwide Permit 13. This reporting task includes a summarization of data collected during field efforts, BIO-WEST's professional findings and judgements regarding the project, and applicability of the NWP program. Project plans will be reviewed for accuracy and compliance with the nationwide permit. A short letter report will be prepared outlining the above. However, a formal PCN NWP may be required depending on impacts. A full permit will be submitted to CobbFendley for review if necessary.

ASSUMPTIONS

- The proposed site will be accessible during normal business hours, and any access codes, keys, or other entry methods will be provided to BIO-WEST.
- BIO-WEST assumes it will take two field crews, each consisting of a field lead and a technician, 2 days to complete TASK 1 according to USACE standards.
- The use of a UTV or ATV is not expected.
- All THC coordination can take place via email, letter, or telephone.
- No formal or informal coordination with the USFWS is proposed as part of this task.
- Project site boundaries will be set and will remain the same throughout this project.
- BIO-WEST will be provided with a completed User Questionnaire for Phase I Projects (Attachment 1).
- BIO-WEST will be provided with a plat map or other type of drawing showing the property boundaries.

- Any required agency file reviews will be able to be completed via the internet or phone calls.

- BIO-WEST will be provided access to the buildings and shown around by an individual familiar with the property.

- Due to inherent limitations of data quality, information access, time and cost constraints, an environmental site assessment conducted under the ASTM protocols cannot wholly eliminate all uncertainty regarding the potential for recognized environmental conditions connected with a property. Our investigation is intended to reduce, but cannot as a practical matter eliminate, uncertainty regarding the potential for recognized environmental conditions in connection with the property. As such, BIO-WEST makes no warranty that our investigation discloses all existing or potential environmental concerns that may be present at the subject property.

SCHEDULE

BIO-WEST has personnel available to begin the initial project reviews within two weeks of authorization to begin. BIO-WEST anticipates the following schedule for this project:

- Task 1: Waters of the U.S. Delineation: 30 days
- Task 2: Archeological Desktop Site File Review: 20 days
- Task 3: Phase I Environmental Site Assessment: 30 days
- Task 4: Wetland Impact Analysis & Project Design Consultation: 15 days
- Task 5: Clean Water Act Permitting: TBD

Work for Task 1, 2, & 3 can be conducted concurrently; however remaining tasks will be undertaken individually. While BIO-WEST cannot guarantee approval of any permit application, BIO-WEST will utilize its best professional judgment and the standard and care utilized by similar companies completing similar work.

ESTIMATED COSTS

The estimated cost associated with this investigation is noted below. This project will be conducted and billed as indicated below.

Task 1: Waters of the U.S. Delineation (Lump Sum) $7,500.00
Task 2: Archeological Desktop Site File Review (Lump Sum) $1,200.00
Task 3: Phase I ESA (Lump Sum).....$5,500.00
Task 4: Wetland Impact Analysis & Project Design Consultation (Lump Sum).....$1,700.00
Task 5: Clean Water Act Permitting.....
Subtask 5A: Nationwide Permit (Lump Sum) $12,000.00*
Subtask 5B: Individual Permit (Time and Materials) $48,000.00
Task 6: Archeological Pedestrian Field Survey & Reporting.....$16,100.00

***If an Individual Permit is required, the funds allocated in Subtask 5A will be applied to Subtask 5B**

February 6, 2019
Mr. Brad Matlock, P.E.
Cobb, Fendley, & Associates, Inc.
Grissom Road and Outfall

SUMMARY AND CONDITIONS OF ENGAGEMENT

You may authorize BIO-WEST to begin the work as proposed by issuing a Subcontract for Professional Services. This proposal is valid only if authorized within 60 days from the proposal date.

BIO-WEST greatly appreciates the opportunity to provide this scope of services and cost estimate. If you have any questions or would like any additional information, please feel free to contact me at (832) 595-9064 or ABoswell@BIO-WEST.com.

Sincerely,

Andy Boswell

Andy Boswell
Project Manager & Senior Ecologist
BIO-WEST, Inc.

RABA KISTNER
Building Better Tomorrows
3602 Westchase
Houston, TX 77042
www.rkci.com

P 713.996.8990 **F** 713.996.8993
Toll Free 866.996.8990
TBPE Firm – F-3257

Proposal No. PHA18-175-00
December 20, 2018

Mr. Kerry Lackey, P.E., Senior Project Manager
CobbFendley & Associates, Inc.
1920 Country Place Parkway, Suite 310
Pearland, Texas 77584

Re: Proposal for Geotechnical Engineering Services
Grissom Road Reconstruction
City of League City, Texas

Dear Mr. Lackey:

On the basis of the electronic mail transmittal received by our office from you on Tuesday, December 18, 2018, **RABA KISTNER Consultants, Inc. (RKCI)** is pleased to submit this proposal for Geotechnical Engineering Services to CobbFendley & Associates, Inc. (CLIENT) for the above-reference project. The broad objectives of our study will be to explore subsurface conditions along about a 1-mile segment of Grissom Road and to provide recommendations for new concrete pavement and underground utilities. Described in this letter are:

- our understanding of pertinent project characteristics;
- our proposed scope for field and laboratory study;
- our proposed scope for engineering evaluation and reporting;
- our tentative project schedule; and
- our lump sum study fee.

Project Description

The project consists of the reconstruction of an approximately 5,280-ft long segment of Grissom Road, which is currently a two-lane asphalt roadway with open ditches, into a two-lane concrete curb and gutter roadway with future expansion into a four-lane boulevard in the City of League City, Texas. The proposed road reconstruction project begins approximately 200 feet east of Abigail Lane and terminates at the intersection of W Nasa Road. The proposed project also includes the installation of new underground RCP and concrete box storm sewers; slope paving; drainage ditches; driveways; asphalt road reconstruction near W. Nasa Road; traffic signals near Challenger Park entrance; outfall into Clear Creek; temporary asphalt driving surface and subgrade; water line and sanitary sewer utilities.

Information provided by CLIENT indicates the RCP box culvert storm drains will have a maximum depth of less than 10 feet. Force main and water line depths are approximately 5 feet.

Field Study

Based on the site plan and boring spacing requiremenets provided by CLIENT, **RKCI** will conduct the following drilling scheme in order to assess subsurface conditions at the subject site.

Proposed Structure	Number of Borings	Depth, ft*	Total Depth, ft
Grissom Road Segment	11	15	165
Outfall into Clear Creek	2	20	40
	1	15	15
Total Drilling Footage			**220**

* below the existing ground surface elevation, or auger refusal, whichever occurs first.

RKCI will perform the necessary One-Call notifications prior to beginning the field drilling activities. The borings will be located in the field by measuring distances from known landmarks or reference points. Our scope of services and cost do not include surveying of the boring locations. However, **RKCI** recommends that the final boring locations be surveyed in the field by the CLIENT or their representative.

Prior to drilling, the existing pavement will be cored at the 11 locations with a 6-inch diameter core barrel to measure thickness of the asphalt pavement sections. Soil samples will be taken at continual 2-ft intervals to 10-ft depth and at 5-ft intervals thereafter. Soil samples will be obtained using conventional split-spoon and/or Shelby tube sampling techniques in general accordance with applicable American Society for Testing and Materials (ASTM) standards. Representative portions of the samples will be sealed, identified, packaged, and transported to our laboratory for subsequent testing and classification.

Traffic control will likely be required to safely route traffic around the drilling crew during the field work activities. **RKCI** will provide off-duty police officers and/or other certified traffic subcontractor to perform traffic control duties.

Water level readings will be recorded for the open boreholes during drilling and at drilling completion. If free water is encountered during drilling, the **RKCI** geologist will temporarily suspend drilling operations and obtain water level measurements in the open borehole at 5-minute intervals over a 15-minute time interval. Water level measurements will also be recorded at completion of drilling prior to backfilling the boreholes with the auger cuttings and spoils generated during the drilling operations. The core holes in the pavement will be sealed with bitumen.

Laboratory Study

Upon completion of the subsurface exploration, a testing program will be designed to define the strength and classification characteristics of the foundation soils. The laboratory testing program is anticipated to include moisture content tests, Atterberg Limits (plasticity) tests, unconfined compressive strengths, dry unit weight determinations, and grain size analyses. However, the type and number of laboratory tests

will be based on the subsurface conditions encountered in the borings. The laboratory testing will be performed in general accordance with applicable ASTM standards.

Engineering Analysis and Report

The field and laboratory phases of the study will be reviewed by our staff of engineers and geologists. The results of our review, together with the supporting field and laboratory data, will be presented in a written engineering report. Included therein will be recommendations concerning the reconstruction of Grissom Road. The Geotechnical Engineering Report may include the following information and recommendations, if applicable:

- A summary of the field and laboratory sampling and testing program;
- Boring logs and laboratory testing results;
- A review of the general site conditions including a description of each of the sites, existing pavement section thickness, the subsurface stratigraphy, groundwater conditions, and the presence and condition of fill materials, if encountered;
- Trench safety and groundwater control, if applicable;
- Bedding and backfill for RCP box culvert storm sewer lines and sanitary sewer and water lines in accordance with League City requirements;
- Pavement subgrade preparation and concrete pavement design in accordance with League City; and,
- Subgrade preparation and asphalt pavement section design for temporary driving surface near W Nasa Road.

The final report will be reproduced electronically.

Tentative Project Schedule

Based on our present workload and weather permitting, it is anticipated that the field exploration phase of this study can begin within three to five working days of receiving written authorization to proceed, provided that the site is accessible to buggy-mounted drill rigs and the CLIENT has supplied us with all available information regarding existing utilities and below-grade structures on site (if any). The field exploration and laboratory testing phases of the study are expected to take approximately seven to ten working days to complete. The engineering report will be submitted within an additional five to seven working days following completion of the laboratory testing. The above schedule does not account for delays due to inclement weather. We will be pleased to provide the design team with verbal design information as the data becomes available.

Lump Sum Cost

The total lump sum cost for the study outlined herein is $14,950 for geotechnical engineering services in support of this project. Should unusual subsurface conditions be encountered in the field indicating the desirability of significantly broadening the scope of study, we will contact you to receive written authorization before proceeding with any additional work. Additional services will be billed on a unit basis

in accordance with our standard fees as indicated on the attached Schedule of Fees for Professional Services.

RKCI has been provided with a schematic illustration of the limits of the subject project. Our scope of services and cost assumes that the boring locations will be accessible to buggy-mounted drilling rigs with the vehicles and crew protected by a subcontracted traffic control firm consisting of lane closures and utilizing standard warning signs, cones, and/or off-duty law enforcement personnel to alert the traveling public of work ahead.

Further, **RKCI** will take reasonable efforts to locate underground utilities prior to performing any underground exploration activities by contacting the local "one call" utility locating service for commercial utility companies (such as natural gas, electric, water, etc.) to locate and mark in the field all utilities within the limits of the subsurface exploration activities. **RKCI** will not be responsible for any damage to utilities not properly located by the aforementioned method or to any utility not located by the aforementioned method but encountered and damaged during the subsurface exploration process. If during project execution **RKCI** feels that there exists a possibility of un-located or improperly located utilities, **RKCI** will notify CLIENT and discuss additional utility locating services and processes to reduce the probability of encountering a utility to acceptable levels. The cost of such additional utility locating services will be an additional charge and will not be done until approved by the CLIENT via additional work by supplemental agreement.

Historically, the cost of our field services is about 45 percent of our total fee. These services are predominantly provided by subcontractors. In order to promptly pay our subcontractors and continue to be able to respond to your needs, we will send you an interim invoice for 45 percent as soon as the field exploration phase of our study is complete.

It should be noted that our study scope (and project cost) do not include plan review or earthwork and foundation excavation observations during the construction of the project. However, plan review and construction observation costs should be included in the project budget.

It should also be noted that our study scope (and project cost) do not include professional time or travel expenses for participation in design team meetings. If these services are required, they will be billed at our standard billing rates for professional time plus expenses.

Acceptance

We appreciate the opportunity of submitting this proposal and look forward to working with you in the development of this project, which will be carried out accordance with this letter and the terms and conditions presented in the CobbFendlley *Subcontract for Professional Services*.

Our invoices are due and payable upon receipt at P.O. Box 971037, Dallas, Dallas County, Texas 75397-1037.

RKCI considers the data and information contained in this proposal to be proprietary. This statement of qualifications and any information contained herein shall not be disclosed and shall not be duplicated or used in whole or in part of any purpose other than to evaluate this proposal.

Very truly yours,
RABA KISTNER CONSULTANTS, INC.

John D. Brown, P.E.
Manager, Geotechnical Services

JDB/dar

Attachment
Copies Submitted: Above (1-electronic)

SCHEDULE OF FEES FOR PROFESSIONAL SERVICES

PERSONNEL:

Principal	$135 to $250/hour
Professional	$70 to $200/hour
Auto Cad Operator	$65 to $110/hour
Technical/Clerical/Administrative	$40 to $80/hour

The specific hourly rate within each classification listed above depends on the experience, special training, and qualifications of the personnel needed for the project. For projects requiring work at any hazardous waste site, there will be a $10 per hour surcharge added to the normal billing rate for all personnel. Consultants to Raba Kistner (RK) will be charged according to their professional classification.

EXPENSES: Use of company automobiles will be charged at $1.00 per mile. Automobiles and light trucks assigned to field sites will be charged at $70.00 per day, plus $1.00 per mile over 50 miles per day. Copies will be charged at $0.25 per page.

Other project specific charges for use of RK equipment or for RK testing will be in accordance with established fee schedules. All other project specific, third-party costs will be charged at cost plus 15 percent.

Invoices will be submitted monthly for work in progress in our standard format. They are due and payable upon receipt and become past due 30 days after the billing date. Past due invoices may be subject to late charges at the rate of 1-1/2 percent per month (18 percent per annum). In the event that the State of Texas legislates a sales tax on Professional Services, the amount of the tax will be PAYMENT added to the appropriate service rate charged. Our invoices are due and payable upon receipt at P.O. Box 971037, Dallas, Texas 75397-1037.

Preparation of non-standard invoice will be charged on a time and materials basis in accordance with the rates in this fee schedule.

CONDITIONS: Services will be performed in accordance with our Standard Terms and Conditions.

The proposal to which this schedule is an attachment is valid for 90 days from the date of the proposal.

CobbFendley

ATTACHMENT B

BASIS OF COMPENSATION

Cobb, Fendley & Associates, Inc.
Proposal for Professional Engineering Services
Reconstruction of Grissom Road

A. BASIC SERVICES

The Compensation to be paid to CobbFendley for providing the BASIC SERVICES rendered under this agreement shall be based on Lump sum fees for overall phases of the work as shown below. Reimbursable items and subconsultants will be subject to a 10% administration charge.

1. PHASE 1 – PRELIMINARY ENGINEERING REPORT (PER) *(Lump Sum)* $200,210
2. PHASE 2 – FINAL DESIGN *(Lump Sum)* $406,345
3. PHASE 3 – BID PHASE SERVICES *(Lump Sum)* $12,615
4. PHASE 4 – CONSTRUCTION ADMIN. SERVICES *(Lump Sum)* $73,030

Subtotal *(Lump Sum)* $692,200

Reimbursable Expenses

1. Reproduction, mileage, delivery charges, etc. $8,000

B. ADDITIONAL SERVICES

1. Drainage Analysis by CobbFendley *(Lump Sum)* $25,585
2. Environmental Services by Bio-West- (incl 8% markup) $99,360
3. Geotechnical Services by Raba Kistner - (incl 10% markup) $16,445
4. Survey by CobbFendley *(Lump Sum)* $65,470
5. Traffic Intersection Analysis *(Lump Sum)* $23,980
6. Right-of-Way by CobbFendley *(Lump Sum)* $42,410
7. Roundabout Design by CobbFendley *(Lump Sum)* $16,500

Subtotal, Additional Services $289,750

TOTAL, Basic & Additional Srvcs Including Reimbursables $989,950

The Compensation for any other Additional Services which the City desires to be added to the work scope of the project shall be negotiated. Reimbursable items are included. Subconsultant invoices will be subject to a 10% administration charge. Services will be charged according to those personnel directly involved in providing the service, and will be rounded to the nearest half hour.

Reimbursable Direct Expenses are included.

CobbFendley

2019 Standard Rate Schedule

Senior Engineer V or Principal	$290.00/HR
Senior Engineer IV or Project Manager V	$270.00/HR
Senior Engineer III or Project Manager IV	$235.00/HR
Senior Engineer II or Project Manager III	$220.00/HR
Senior Engineer I or Project Manager II	$195.00/HR
Engineer III or Project Manager I	$170.00/HR
Engineer II	$150.00/HR
Engineer I	$125.00/HR
Senior Technician III (GIS, Telecom, Utility, CAD, Field)	$165.00/HR
Senior Technician II (GIS, Telecom, Utility, CAD, Field)	$145.00/HR
Senior Technician I (GIS, Telecom, Utility, CAD, Field)	$125.00/HR
Technician III (GIS, Telecom, Utility, CAD, Field)	$100.00/HR
Technician II (GIS, Telecom, Utility, CAD, Field)	$80.00/HR
Technician I (GIS, Telecom, Utility, CAD, Field)	$60.00/HR
Licensed State Land Surveyor	$235.00/HR
Registered Professional Land Surveyor	$170.00/HR
4 Person Survey Crew	$190.00/HR
3 Person Survey Crew	$170.00/HR
2 Person Survey Crew	$145.00/HR
1 Person Survey Crew	$105.00/HR
2 Person Hy-Drone Crew	$340.00/HR
2 Person UAV Drone Crew	$235.00/HR
Construction Manager III	$280.00/HR
Construction Manager II	$230.00/HR
Construction Manager I	$185.00/HR
Construction Observer III	$155.00/HR
Construction Observer II	$130.00/HR
Construction Observer I	$110.00/HR
Sr. Right-of-Way Agent III or ROW Project Manager III	$250.00/HR
Sr. Right-of-Way Agent II or ROW Project Manager II	$200.00/HR
Sr. Right-of-Way Agent I or ROW Project Manager I	$180.00/HR
Right-of-Way Agent III or ROW Attorney	$160.00/HR
Right-of-Way Agent II	$140.00/HR
Right-of-Way Agent I	$110.00/HR
Administrative	$105.00/HR
Clerical	$80.00/HR
Field Data Device	$40.00/HR/unit

CobbFendley

2019 Standard Rate Schedule
(Continued)

SUBSURFACE UTILITY ENGINEERING

Two-Man Designating Crew (4-Hour Minimum).....$170/HR

One-Man Designating Crew (4-Hour Minimum).....$110/HR

Vacuum Excavation Truck with 2 Technicians (Vac 6000) (4-Hour Minimum).....$315/HR

Vacuum Excavation Truck with 2 Technicians (Vac 3000 & 4000) (4-Hour Minimum).....$295/HR

Ground Penetrating Radar with 1 Technician (4-Hour Minimum).....$260/HR

Traffic Control Officer.....@ Cost + 10%

Traffic Control (Lane Closures, etc.)..... To Be Negotiated

Permits (Local, State, etc.).....@ Cost + 10%

Designation, Location & Traffic Control Vehicles.....$6.50/Mile

REIMBURSABLE EXPENSES

Consultant or Specialty Contractor (Outside Firm).....@ Cost + 10%

Courier, Special Equipment Rental.....@ Cost + 10%

Reasonable Out of Town Travel Expenses (Air, Hotel, Rental, etc.)..... @ Cost

Mileage (Standard Car or Truck)..... IRS Approved Rate

Per Diem for Out of Town Travel (Per Day/Person)..... GSA Standard Rate/Day

Title Plant Charges.....@ Cost + 10%

Other Misc. Expenses Related to the Project.....@ Cost + 10%

In-House Reproduction:

- Copies (Up to 11” x 17”).....$0.15/Each
- Color Prints (Up to 11” x 17”).....$1.50/Each
- Color Prints (Larger than 11” x 17”).....$3.00/Sq. Ft.
- Bluelines (All Sizes).....$1.00/Each
- Bond Prints (All Sizes).....$2.00/Each
- Mylar Prints $12.00/Each
- Vellum Prints $9.00/Each

ATTACHEMENT C
SCHEDULE

City of League City
Grissom Road Improvements
Proposed Schedule - February 7, 2019